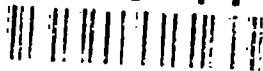


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EARLY NORTH AFRICAN CAMPAIGNS 1940-1942: A CASE STUDY

BY

Lieutenant Colonel David E. Spaulding
United States Army



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EARLY NORTH AFRICAN CAMPAIGNS 1940-1942: A CASE STUDY

AN INDIVIDUAL STUDY PROJECT

by

**Lieutenant Colonel David E. Spaulding
United States Army**

**Colonel Jerry Comello
Project Adviser**

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**U.S. Army War College
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ABSTRACT

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Before the first American ground forces ever landed in North Africa, Britain and her allies fought a long and bloody desert war against the Axis coalition. For 29 months, Britain fought the Italians and Germans. This study reviews the early North African campaigns and shows that the British pursued a strategy of fighting the Axis powers in a secondary theater of war and that this strategy evolved more by circumstance than design. This study shows that the British correctly estimated the strategic situation in North Africa and followed a difficult, yet successful, strategy that diverted Axis resources from other fronts and set the stage for the Axis defeat in both North Africa and Europe. This study covers the period from 10 June 1940, when Britain went to war in North Africa, until 8 November 1942 when Allied forces conducted landings in Northwest Africa under the code name Operation Torch. This study concludes: that the British followed a successful strategy, that these campaigns illustrate the political nature of theater warfare and command, that the British Middle-East Command was a successful joint and combined command structure, that these campaigns illustrate the importance of properly estimating, planning and providing adequate logistical support to execute theater strategy, and that the British and Americans learned other operational, technical, and tactical lessons from these early campaigns.

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CHRONOLOGY

1889	Italy acquires Eritrea in East Africa
1905	Italy acquires Italian Somaliland
1911	Italy siezes Libyan provinces of Tripolitania and Cyrenaica
1921	Mussolini elected to Chamber of Deputies
1922	Egypt obtains independence
1930	Graziani appointed Commander-in Chief (C-in-C) Italian Forces in Libya
2 Nov 1930	Coronation of Haile Selassie I
1933	Hitler becomes Chancellor of Germany
1934	Graziani appointed Governor of Italian Somaliland
2 Oct 1934	Italy invades Abyssinia (Ethiopia)
9 May 1936	Haile Selassie flees to England
1 June 1936	Italy annexes Ethiopia
1936	Graziani appointed Viceroy of Ethiopia
1936	Anglo - Egyptian Treaty
Aug 1937	MG Wavell appointed G.O.C (General Officer-in Charge) in Palestine
Apr 1938	Anglo - Italian Agreement (non-aggression)
1938	Graziani appointed Governor of Italian East Africa
Apr 1938	LTG Wavell appointed G.O. C-in-C Southern Command at Salisbury, United Kingdom
Apr 1939	Germany occupies Czechoslovakia
	Italy annexes Albania
Jul 1939	British Middle-East Command formed
	General Wavell appointed G.O. C-in-C
Spring 1939	Anglo-Turkish Declaration signed
Apr 1939	British/French assurances to Greece/Romania
1 Sep 1939	Germany invades Poland. WW II begins
10 May 1940	Germany invades Belgium
12 May 1940	Germany invades France
27 May - 4 Jun 1940	British evacuate troops at Dunkirk, France
10 Jun 1940	Mussolini declares war
11 Jun 1940	France surrenders
Jul 1940	British attack Vichy French Fleet at Oran and Dakar. 2000 French casualties
Aug - Oct 1940	Battle of Britain (Air)
13 Sep 1940	Graziani advances across Egyptian frontier
Nov 1940	Italian invasion of Greece fails
8 Dec 1940	Wavell counterattacks against the Italians
11 Dec 1940	Wavell sends 4th Indian Division from Egypt to Sudan to support Ethiopian Invasion
20 Jan 1941	Haile Selassie returns to Ethiopia to lead the "rebellion" (insurgency)

14 Feb 1941 German advanced party arrives in Tripoli
 Jan - May 1941 British campaign to free British and
 Italian Somaliland and Ethiopia
 5 Mar 1941 British force sails from Africa to Greece
 24 Mar 1941 Rommel begins first offensive
 Apr 1941 Germany/Italy invade Yugoslavia & Greece
 28 Apr 1941 Britain evacuates Greece
 20 May 1941 Germany attacks Crete
 27 May 1941 British evacuate Crete
 31 May 1941 British Army enters Bagdad, restores regent
 and takes control of airfields
 21 May - 22 Jun 1941 British Army defeat Vichy French in Syria
 and deny airfields to Germans
 May - Jul 1941 4th & 5th Indian and 1st South African
 Divisions move from Ethiopia to Egypt
 17 Jun 1941 Wavell's second counteroffensive fails
 (Operation Battleaxe)
 21 Jun 1941 Churchill replaces Wavell with Auchinleck
 11 Jul 1941 Wavell appointed C-in-C India
 Aug 1941 U.S. and British Joint Chiefs of Staff
 meet at Placentia, Newfoundland
 18 Nov 1941 Auchinleck's counteroffensive
 (Operation Crusader)
 26 Nov 1941 Auchinleck relieves Gen Cunningham as
 Commander, 8th Army
 Dec 1941 - Jan 1942 Arcadia Conference in Washington, D.C.
 (Decision on U.S./U.K. Combined Command)
 (Churchill proposes Operation Gymnast)
 21 Jan 1942 Rommel's second offensive
 27 May - 22 Jun 1942 Battle of Gazala
 21 Jun 1942 Tobruk captured by the Afrikakorps
 30 Jun - 3 Jul 1942 First Battle of El Alamein
 18 - 30 Jul 1942 U.S. agrees to Operation Torch (Gymnast)
 8 Aug 1942 Churchill relieves Auchinleck
 Alexander appointed C-in-C Middle-East
 Montgomery appointed Commander, 8th Army
 31 Aug - 7 Sep 1942 Battle of Alam El Halfa
 22 Sep 1942 Rommel medically evacuated to Germany
 23 Oct 1942 Second Battle of El Alamein
 (Montgomery attacks)
 25 Oct 1942 Rommel returns to North Africa at
 Hitler's request
 4 Nov 1942 Rommel begins retreat to Tunisia
 8 Nov 1942 Operation Torch begins with Allied
 landings in Northwest Africa

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INTRODUCTION

Before American ground forces ever landed in North Africa, Britain and her empire allies fought a long and bloody desert war against the Axis coalition. The early North African campaigns illustrate a classic application of the indirect approach to a strategy. Faced with the fall of the European Continent, the British fought in a secondary theater where they had prepared to conduct military operations, could deny vital areas to the enemy and at the same time, cause the Axis powers to divert their energy and resources. British perseverance led to Operation Torch and helped develop an important strategic position that contributed to the isolation and defeat of Germany. This study will show that the British correctly estimated the strategic situation in the Middle East and developed and pursued a difficult, yet successful, strategy that diverted Axis resources and set the stage for their eventual defeat both in North Africa and Europe. Furthermore, this paper will show that victory in North Africa was vital to the survival of Churchill's government which helps to explain why the British pressured the United States so intensely to participate in Operation Torch.¹ Additionally, the rapid success of Operation Torch depended upon a British victory in Egypt. An early British defeat would have further lengthened the North African War, and possibly caused the forces of Operation Torch to fight a series of extended desert campaigns similar to those experienced by the British 8th Army. Moreover, the early North African campaigns provided the British with extensive experience in combined and joint warfare and demonstrated the value of unity of command within

a theater of war. Furthermore, British success in North Africa was made possible by the establishment of an extensive political and logistical infrastructure that they had developed throughout the Mediterranean, Middle East and East Africa.² These campaigns also demonstrated several important lessons about modern mobile warfare. They showed that an armor reserve would be an important influence on the future battlefield and that attrition would often be applied with maneuver to defeat mechanized forces in open terrain. Lastly, they revealed that the German tanks possessed better guns and armor than the early Allied tanks and this would lead to improvements in later models and ammunition.

The fighting in North Africa began when Mussolini declared Italy at war on 10 June 1940, as Hitler was securing his victory in France. The North African War would rage for almost three years. The British would initially achieve a spectacular victory over the Italians, but then the Germans would enter the war by sending Rommel to establish the Afrikakorps. These Armies would seesaw back and forth across the Cyrenaican Region of Libya until Rommel finally captured Tobruk on 11 June 1942 and then drove deep into Egypt securing El Alamein on 3 July 1942. The operational victory represented a crisis of the highest order to Sir Winston Churchill's government. The loss of Tobruk and prospect of further defeats could jeopardize Churchill's government on the home front and the future of Operation Torch tentatively planned for the fall of 1942.

The early North African campaigns ended with the Second Battle

of El Alamein. At El Alamein the British 8th Army broke through Rommel's lines and pursued him all the way to Tunisia. The British achieved this victory by bringing the right combination of leadership, material and synchronization to their joint and combined operations. Rommel and his German-Italian Army had exceeded their culminating point. Weakened by attrition and by a logistical system that did not support them, they were overwhelmed by British strength. The British victory in these early North African campaigns set the stage for a rapid Allied campaign during Operation Torch and the final defeat of the German-Italian effort in Tunisia. Finally, the British strategy of taking the indirect approach in a secondary theater of war did weaken both the German and Italian war efforts and helped the Allies achieve a strategic position from which to launch further campaigns against Italy and ultimately eliminate one of the Axis powers.

HISTORICAL AND STRATEGIC SETTING

Italian Interests

Both the British and Italian governments had long standing interests in Africa that dated back to the 19th Century. Also, the German government had possessed colonies in Africa, but lost them by the end of World War I. During the 1930s both Britain and Italy moved to strengthen their position in the Middle East, although for different reasons. The Italians embarked on an expansion of the Colonial Empire by invading and annexing Ethiopia

in 1936 and increasing the size of their Army in Libya to 250,000 soldiers. As World War II (WW II) approached and international tensions increased, Britain responded by strengthening alliances and in July of 1939 formed a new Middle East Command to be headquartered in Cairo.

Following the conquest of Ethiopia, Italy established the "Africa Orientale Italiana" (Italian East Africa) that encompassed Libya, Italian Somaliland and Ethiopia.

British Interests

British interests in North Africa and the Middle East began with the Suez Canal, but also extended from Gibraltar to Palestine to the British airfields in Iraq and to the Colonial possessions of British Somaliland, Kenya and Sudan in East Africa. The Suez Canal represented a strategic link in the sea lines of communications within the British Empire for it connected Britain with East Africa, India, Australia, and New Zealand. Although Egypt had obtained independence in 1922, Britain retained close ties and in 1936 signed the Anglo-Egyptian Treaty which gave Britain the right to station 10,000 soldiers in Egypt during peacetime and reenforce the troops in time of war.³ Following the Italian conquest of Ethiopia and the exile of Emperor Haile Selassie to London, Britain concluded the Anglo-Italian Agreement in 1938.⁴ This was essentially a non-aggression pact that pertained to their Mediterranean and African possessions. After Germany occupied Czechoslovakia in April 1939 and Italy invaded Albania, Britain signed a mutual assistance pact with Turkey and also gave

assurances of help to Greece and Romania.⁵ As the strong winds of war blew, Britain created the new Middle East Command. General Archibald Wavell was appointed General Officer Commander-in-Chief (G. O. C-in-C) and assumed command in July 1939. General Wavell's new command encompassed all of the Egypt, Britain's East African colonies (Sudan, Kenya and British Somaliland), Palestine, Aden, and Iraq where Britain operated airfields that linked Europe and the Far East.

In February 1940, General Wavell addressed the first contingent of Australian soldiers to arrive in Palestine. In his remarks, he outlined three principal British concerns.

I will now sketch for you some of the possibilities of the Middle East as a theater of operation. The first is the possibility of Italy becoming hostile, when Egypt, the Sudan, British and French Somaliland or Aden, may be attacked by land and by air; and our lines of communication, both through the Mediterranean and through the Red Sea, be attacked by sea and by air.

The second main possibility is an advance of the Germans, or by the Germans and Russians combined, into the Balkan area, with the object of securing the oil and corn in Romania,.....

The third menace to our interests is an advance by Russia into Iraq against the oil fields.....⁶

Two months after Wavell delivered these remarks, Germany invaded Poland on 1 September 1939.

German Interests

Hitler's grand vision of world domination and conquest continued to march in 1940. After Hitler's move into Czechoslovakia, Mussolini annexed Albania.⁷ Then in early May, Germany invaded Belgium and France, and 337,000 soldiers were evacuated at Dunkirk.⁸ Germany occupied northern France, while the Vichy French Government controlled southern France and the French territories in Western Africa, Syria and the Far East. Each bold move by Hitler seemed to encourage Mussolini, his Axis partner, to follow in his footsteps. On the eve of Germany's victory in France, Mussolini declared Italy to be at war on 10 June 1940 and launched an abortive invasion into southern France.⁹ Although Italy would attempt to invade Greece in November 1940 and participate in Hitler's Balkan campaign of 1941, Italy's principal national interests lay to the south in its African empire. Hitler's attitude towards North Africa at this time is best described by John Keegan:

Although Hitler maintained a colonial governor-in-waiting on his ministerial staff, he had made no move in the meantime to extend his war-making south across the Mediterranean. Indeed, until Italy declared for him, he had no means with which to mount offensive operations into Africa, and, unless Mussolini tried but failed there, he had no cause.¹⁰

Hitler showed little interest in Africa, except that it was the province of his European ally, Mussolini. Germany's main interests looked to eastward towards Russia.

In the later half of 1940, the stage was set for the war in

North Africa. France had fallen and Russia was abiding by the Non-Aggression Pact with Germany. Britain and her dominions now stood alone against the German and Italian tyrants.

Middle East Strategy

British strategy in 1940 evolved more by circumstance than design. From August to October, during the Battle of Britain, the Royal Air Force defended the homeland from Hitler's air campaign. But British and Free French forces could not hope to return to the European continent without the help of Russia or the United States. Only in North Africa could Britain directly engage the Axis powers in a land war. For the past year, General Wavell had been preparing for such an eventuality by quietly reorienting the planning and the forces of the new Middle East Command towards a more aggressive outlook and away from the non-provocative policies of the past.¹¹ He directed his generals to work on the assumption that they would be at war with Italy in six months.¹² During the eighteen months from June 1940 to December 1941, British Strategy for North Africa and Europe matured. The North African war began as soon as Mussolini declared war. The British initially achieved a great victory over the Italians, but that was quickly followed by Hitler's decision to enter the war and assist his Italian Partner. Britain still stood alone against the Axis, but in June 1941 that changed when Germany invaded Russia. On 19 July 1941, Stalin pressed his first demand with Churchill that Britain open a second front on the European continent.¹³ Over the next three years, Stalin would continue to pressure Britain and later the United

States to open a second front. Although a second front was impossible in 1940, Roosevelt and Churchill agreed to extend the Lend-Lease Program to Russia during their conference at Placentia Newfoundland in August 1941.¹⁴ At this conference, the British and American military Chiefs of Staff met for the first time. And by December 1941, as Churchill, Roosevelt and their military staffs prepared to meet again in Washington for the Arcadia Conference, the British concept of an indirect strategy in Europe seemed to have evolved. In a diary entry on 3 December 1941, General Sir Alanbrooke, the Chief of the Imperial General Staff (CIGS) wrote:

I am positive that our policy for the conduct of the war should be to direct both military and political efforts towards the early conquest of North Africa. From there we shall be able to reopen the Mediterranean and stage offensive operations against Italy.
.....
It was plain to me that we must clear North Africa to open the Mediterranean, and until we had done so we should never have enough shipping to stage major operations.¹⁵

The British adopted an indirect approach to their European Strategy. The large land and air forces on the continent of Europe represented the strategic center of gravity of the Axis powers. Not having the resources available to fight on the continent, Britain pursued an indirect strategy that would buy time and weaken the enemy. Michael Howard comments:

This strategic concept was thus not one of manoeuvre, or of skilful deployment of inferior resources. Rather, it was a return to the ideas of the British and French General Staffs at the beginning of the war: the

mustering of superior resources and the isolation of the enemy, followed by a period of pressing in upon the crumbling opponent by stages not yet clearly foreseen.¹⁶

Conversely, it can be argued that Hitler failed to appreciate the importance of North Africa and incorrectly focused his strategy towards Moscow. John Strawson discusses:

Hitler's inability to realize where the true line of operations-that is the direction of strategy in such a way that it yielded decisive strategic prizes-lay. Like Napoleon, he either failed or refused to see that the line ran to London, not Moscow, and that the indirect road to London, a road along which his Italian allies were well placed to be of use, ran through Egypt.¹⁷

Importance of North Africa

The strategic importance of the early North African campaigns to the survival of the British Empire, Britain, Churchill's government and to final victory can not be overstated. This is reflected by the importance Churchill placed on these campaigns to include his relief of two theater commander during the 29 months before the United States entered the North African War. Moreover, Churchill would repeatedly pressure the United States during 1942 to join Britain in launching a combined Allied Landing in Northwestern Africa.

OPERATIONAL SETTING

The Theater

Britain, Italy and Germany each viewed the North African

theater somewhat differently. Britain saw North Africa as a theater of operations within a theater of war. Britain's Middle East Command covered a vast geographic area extending east-west from Tripoli through Palestine, Transjordan and Syria. In May 1941, the command was also given responsibility for Iraq to the coast of the Persian Gulf. Its area of responsibility extended north to include Turkey and the Balkans. To the south, it covered all of East Africa to include what at that time was British Somaliland as well as the British colonies of Sudan, Kenya and Aden. Middle-East Command was headquartered in Egypt which had been an independent nation since 1922. General Wavell described his view of the theater in 1940:

The Middle East Command, which has such wide responsibilities - roughly 1000 miles to north, east and west of Cairo and 2000 miles to south-¹⁸

At times, General Wavell had to contend with events in three or four theaters of operations. There was the North African desert, East Africa, and the Palestine/Iraq theater of operations. He would also conduct operations in Greece and Crete during 1941. The Italians on the other hand viewed the theater as Italian East Africa with designs, no doubt, on Egypt and the British colonies. The Italian view also included the air and sea bridge from Italy to Tripoli. Lastly, the Germans in 1940 had little interest in the North African theater and even when they introduced German forces in 1941 confined their view of the theater to the North Africa desert. However, the Germans did have an interest in the

Mediterranean Sea, Malta, Crete and the Balkans and invaded the latter two in 1941. By 1942, Hitler may have altered this view and seen North Africa as another route to Middle East oil along with the Balkans and Caucasus routes.¹⁹

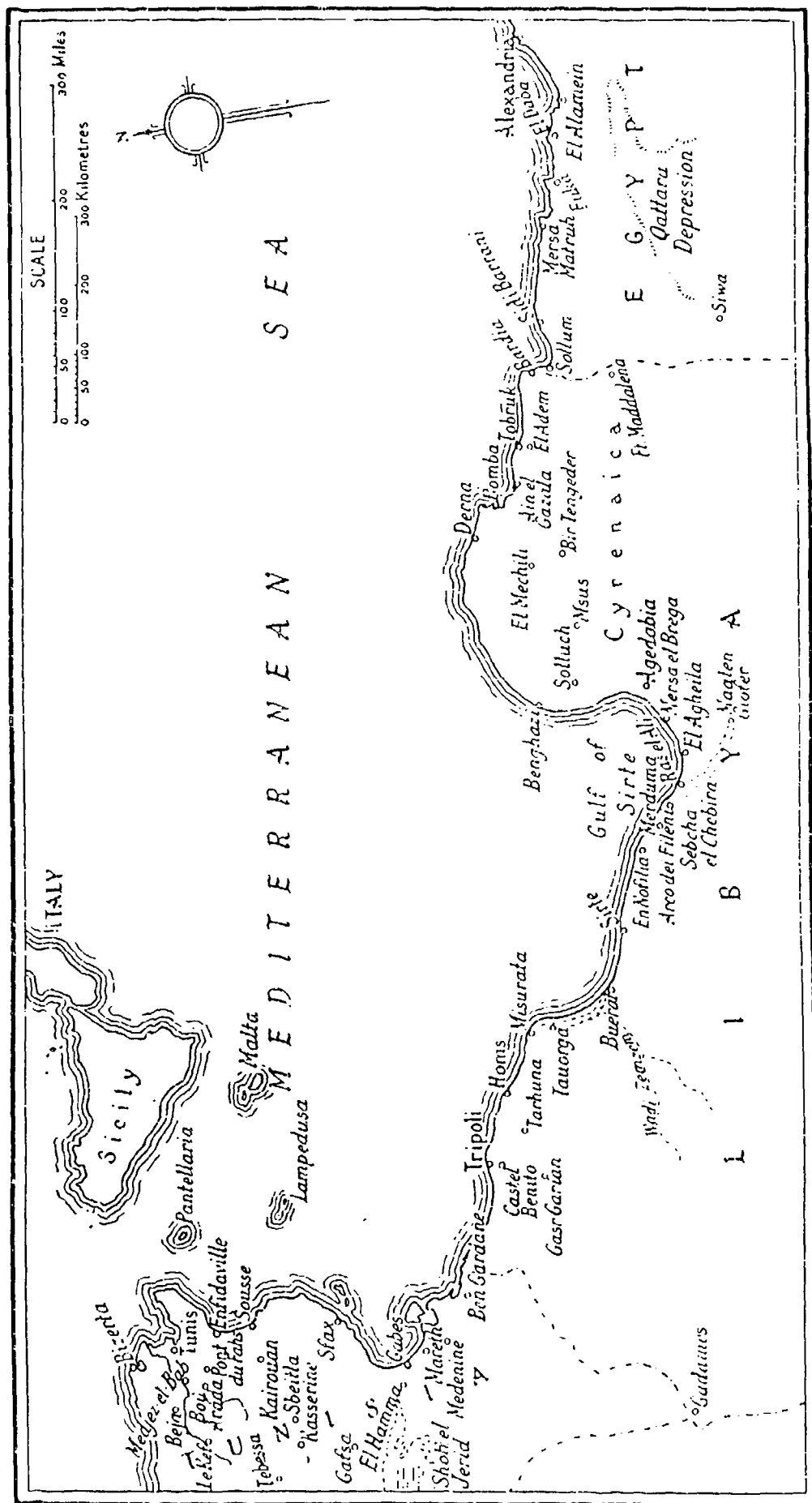
Military Goals and Objectives

The operational centers of gravity for both sides in North Africa were the opposing Armies. While strategic centers of gravity led to the military-industrial capabilities within the homeland of each nation, all sides focused their military operations within the theater on the others' opposing armed forces. Thus, the operational centers of gravity were initially the Italian 10th Army based in the Cyrenaica, and the British Western Desert Force and later the British 8th Army and the Italian-German North African Command. Additionally, Britain, Italy and Germany recognized that control of the Mediterranean or at least portions of it was essential to supporting their war efforts.²⁰

Terrain and Weather

The early North African campaigns occurred along the coastal desert plain of eastern Libya and western Egypt. Although the theater extended from Tripoli in the west to the Nile River Delta, most of the fighting occurred either in western Egypt or the Cyrenaica Region of Libya. The term "Western Desert" was understood at that time to include the entire 1100 mile area between Tripoli and Cairo. This area is characterized by a narrow coastal plain that follows the Mediterranean Sea from the Nile to Tripoli. At most locations this plain is a maximum of 40 to 50

miles wide and is best described as semi-desert where the only growth is Mediterranean Scrub. The "coastal road" that existed in 1940 followed this route and represented the main line of east-west line of communication. Off road movement could easily be accomplished in this plain by armored or motorized vehicles, although heavy rains made both the roads and desert impassible. In western Egypt, the Qattara Depression is a major natural obstacle that extends northeast-southwest for almost 200 miles and reaches a depth of 133 meters below sea level. This obstacle limits north-south movement in the vicinity of El Alamein to about 30 miles between the Mediterranean coast and the Qattara. The Cyrenaican Region in northeastern Libya that was the scene of many battles is characterized by the narrow coastal plain that rises rapidly into the Jebel al Akhdar (Green Mountains). These small mountains stretch northeast-southwest between Benghazi and Derna.²¹ This narrow coastal plain continues to the Tripoli area where it widens into a cultivated coastal area.²² To the south of the coastal plain and the Jebel al Akhdar, the terrain rises into a vast Sahara plateau that is composed of rock, wind-driven sand and a few oases.²³ This plateau averages about 200 to 600 meters above sea level. About 300 miles south of the Cyrenaican coastline and about 100 miles southwest of the Qattara Depression lies the Great Sand Sea of the Sahara. Little fighting occurred here; however, special operations units did transit or stage operations from oases bordering the Great Sand Sea. Temperatures along the coastal plain average 50-80F degrees along the coast and 80 to 100F degrees in



THE COAST OF NORTH AFRICA FROM ALEXANDRIA TO TUNIS

the desert regions, with highs in both regions reaching 130F degrees in the summer months. Most of the available water is found along the coastal plain and the only sources in the plateau region are occasional oases and a few ancient Roman wells.²⁵

Tripoli and Alexandria were the major ports along the Mediterranean coast in 1940. But the smaller ports of Benghazi and Tobruk in the Cyrenaica Region represented important logistical and operational locations.

"Whoever controlled these ports and the adjacent airfield had control of the central Mediterranean, and this was of vital importance to the British, as the island of Malta could then be supplied and supported. This island stood athwart the Axis supply lines from Southern Europe to their forces in Africa."²⁶

ARMED FORCES AND COMBAT EFFECTIVENESS

Land Forces

The early North African campaigns were fought by the land, sea and air forces of both sides. The land and air forces varied in size depending on the stage of the war.

In early 1940, Italy maintained a Libyan force of approximately 200,000²⁷ to 250,000²⁸ soldiers organized into 12 Divisions.²⁹ Marshal Maresciallo Balbo³⁰ commanded this force which consisted of the 5th Army in Tripolitania, and the 10th Army located in Cyrenaica.³¹ The 10th Army was composed of five divisions³² and commanded by General Berti. These Italian Forces were largely colonial in character, lacking transport, armed with less modern weapons systems than the British or Germans. Owing to the lack of transport, Italian Infantry often marched on foot, even pulling artillery pieces.³³ Additionally, Italy maintained a large standing colonial Army in East Africa consisting of about 92,000 Italians and 250,000 natives.³⁴

The main Italian Armored Vehicles in use in North Africa during 1940 were the CV33 and CV35 machine gun carriers and the L6/L6-40 and M11-39 tanks. The CV33s and CV35s had 1/2 inch or less of armor plate, carried one or two 30 caliber machine guns, traveled at 25 miles per hour or less, and were about the size of a small car.³⁵ The L6/L6-40 series tanks began production in the mid-1930s and were used in Spain. These were six ton tanks that had a top speed of 29 miles per hour and range of 120 miles on road (60 miles cross-country). Some had revolving turrets with a 20mm

gun, but most had no turret and mounted a 47mm gun. These tanks were poorly armored with a maximum of 1 1/3 inches steel plate.³⁶ The M-11/39 tank weighed 11 tons, was poorly armored, had a 37mm fixed main gun and a rotating turret with two 8mm machine guns.³⁷ Later in the North African War, Italy introduced its main battle tank, the M13/M14 (13-14 ton) series. These tanks were used with the German-Italian Army during Rommel's campaigns. This series had a turret mounted 47mm gun and coaxial 8mm machine gun but was very poorly armored and easily defeated by British two pounder (40mm) tank guns or 37mm shells. These tanks were initially effective against British Matildas and Crusader tanks, but ineffective once the British introduced the Grant and Sherman tanks.³⁸ Italy's Libyan Army was large, but poorly equipped for maneuver warfare in the North African desert. In early June 1940, General Balbo wrote to Mussolini expressing these concerns:

"It is not the number of men, which causes me anxiety, but their weapons. With two big formations equipped with limited and very old pieces of artillery, lacking in anti-tank and anti-aircraft weapons, I need to be able to depend on the closing of ways of access to Tripolitania, and on the perimeters of Tobruk and Bardia. To have fortified works without adequate weapons is an absurdity. Another urgent necessity is anti-aircraft defenses - batteries and organization. It is useless to send more thousands of men if then we cannot supply them with the indispensable requirements to move and fight."³⁹

Allied with the Germans after February 1941, the Italian Army showed better effectiveness both in organization and material. Italian land forces were organized into three types of divisions:

armored, motorized infantry (8000 men), and metropolitan infantry (straight leg, 13000 men).^{40 41 42} By the fall of 1941, the North African Command consisted of the 20th Italian Armored Corps and Rommel's Panzer Group Africa (Panzergruppe). The 20th Italian Corps consisted of one armor division and one motorized division. Rommel's Panzer Group had two corps, one heavy (Afrifakorps) and one light (21st Italian Corps). The Afrikakorps consisted of two Panzer divisions, a light division, and one Italian infantry division (metropolitan). The 21st Italian Corps had one motorized infantry division and three infantry divisions (metropolitan) (ie: semi-motorized).^{43 44} The combat effectiveness of the Italian forces increased when they were employed along with German forces. Similarly, the modernization of the Italian forces benefitted from the German influence as reflected by this excerpt from the Handbook on the Italian Military Forces.

The armored division, as designed before the war, was a mixture of light and medium tanks, none heavier than 11 tons and the majority 3 1/2 tons and 5 tons. It was incapable of more than light assault. The Italian armored division has changed radically in composition under German influence, with an improved type of medium tank and the introduction of self-propelling (semovante) guns and heavier divisional supporting weapons.⁴⁵

German forces did not begin to arrive in the North African theater until late February 1941. Hitler initially sent the 15th Panzer division (armored) and the 5th Light Division.⁴⁶ The 5th Light Division was reorganized as the 21st Panzer Division during 1941.⁴⁷ These forces grew slightly as indicated previously so that

the Afrikakorps consisted of two German Panzer divisions and one German light division as well as one Italian division. The German High Command (O.K.H.) did not send additional units to North Africa until late in 1942 after the Allied landings in New West Africa. For Hitler, North Africa was an economy of force theater.

The main German armaments in North Africa were the Panzer MK III and MK IV tanks and the German 88mm anti-aircraft gun. Although many MK I and MK II tanks were used in early engagements of 1941, the MK III and MK IV predominated with the MK III being the most prevalent German tank.⁴⁸ The Panzer III tank came in numerous variations increasing in weight from 15 and 22 tons as the amount of armor was increased from 14.5mm to 50mm.⁴⁹ The Panzer III came with both short and long barrel 37mm and 50mm guns.⁵⁰ Rommel received the short barreled 50mm Panzer III in summer of 1941.⁵¹ When the Panzer III with the long barrel 50mm gun arrived in the summer of 1942, they could penetrate British and U.S. built tanks at ranges of 1000 yards.⁵² The Panzer III's only shortcoming was its limited 100 miles range.⁵³ The Panzer IV weighed between 17 and 25 tons, had a top speed of 25 MPH and could travel up to 125 miles on roads.⁵⁴ It carried either a short or long barreled 75mm gun, ⁵⁵ but the long barrel was most effective.⁵⁶ The Panzer IV first appeared in June 1942 during the Battle of Tobruk.⁵⁷ With the introduction of the Panzer IV, the Germans could begin engaging British tanks at ranges of 3000 meters. But more importantly, they could force British artillery to retreat, thus exposing the British tanks which had an effective range of only 500 yards against the

Panzer IV.⁵⁸ The German Panzergruppe possessed the most modern tanks in North Africa. In general, they were superior to the British and American tanks in armor, firepower, optical systems and ammunition.⁵⁹ Lastly, the Germans made ingenious use of their 88mm anti-aircraft gun in a direct fire anti-tank role. These guns proved to have a devastating effect upon the British. They could fire twenty rounds of armor piercing ammunition per minute at velocities of 2700 to 3700 feet per second and score hits at up to 4500 meters.⁶⁰ Their 48 inch quick focusing telescopic site gave these weapons sniper-like accuracy.⁶¹ The Germans used these weapons very effectively, often using ruses to draw the British into attacking what appeared to be light defenses. Then they would open up with the 88s once the British had committed themselves. During the Battle of Halfaya Pass on 17 June 1941, five 88s destroyed upwards of 80 British tanks.⁶²

In 1940, the British Army forces in Egypt were commanded by LTG Maitland Wilson and consisted of two partially equipped divisions.⁶³ ⁶⁴ LTG Richard O'Connor commanded the Western Desert Force which consisted of the 7th Armored Division and the 4th Indian Division. Both of these divisions were under strength and operating with only two of their three authorized brigades.⁶⁵ As the war progressed, British forces grew in strength. By August 1941, the Western Desert Force expanded into the British 8th Army consisting of the XIII and XXX Corps. LTG Alan G. Cunningham was appointed as 8th Army Commander. XIII Corps consisted of the 4th Indian Division, the New Zealand Division and the 1st Army Tank

Brigade.⁶⁶ XXX Corps consisted of the 7th Armor Division, 1st South African Division, and two separate armor brigades. By late 1942, the X Corps would also be added to 8th Army.

The British fought the North African campaigns using both their own tanks and American tanks. When the war began, the British Army had two types of tanks. The Matilda tanks were "I" tanks intended to accompany infantry into battle. They were heavily armored (3 1/2 inches), heavy (11 tons), and slow (15 MPH). They carried a 40mm gun (2 pounder). Despite their slow speed, they were widely used. However, they could be killed by the German 88mm gun or the Panzer III with long barrel 50mm gun.⁶⁷ The British Cruiser and Crusader series tanks were faster tanks with top speeds of 25 to 30 MPH. The Cruisers carried 40mm guns while the later Crusader model carried a 57mm gun. Because these tanks had only 14mm of armor, they could only engage other tanks with similar capabilities, such as the Panzer III with short barrel 50mm gun or Panzer IV with short barrel 75mm gun.⁶⁸ Beginning in the summer of 1941, American tanks began arriving in North Africa theater under the Lend Lease Program. Initially, these tanks were of the M3 series and later the M4 (Sherman) tank would be delivered. The M3 series included the light M3 (General Stuart) tank and the medium M3 which was produced in the American version M3 (General Lee) or the British version M3 (General Grant).^{69 70} The Stuart Light Tank replaced the British Cruiser Tanks in the summer of 1941 and was used for cavalry operations, reconnaissance and flank protection. It carried a 37mm gun.⁷¹ The M3 medium

(Stuart) tank was a quick fix hybrid tank intended to provide the British with a gun that could match those of the Germans.⁷² To quickly produce this tank, the U.S. Army mounted a 75mm Pack Howitzer in the side of a developmental chassis and added a small turret with 37mm gun.⁷³ Thus, the main gun of the M3 (Stuart) only fired forward. However, over 3000 of these tanks were produced and they were widely used by the British in North Africa. The Grant's 37mm gun with armor piercing ammunition was said to be more effective than its main gun.⁷⁴ Lastly, the Medium M4 (General Sherman) tank appeared during the Second Battle of El Alamein. the Sherman tank was very reliable and more heavily armored than the Crusaders, but it was slower than the Crusader and its 75mm gun did not have the muzzle velocity of the Crusader's 57mm gun or the Panzer IV's 50mm gun.⁷⁵ By late 1942, the British developed the practice of using their tanks in mixed formations with Shermans leading Crusaders, and Stuarts with a pair of Shermans protecting the flanks. Grants and Crusaders would then follow in a second echelon assault.⁷⁶

Sea Forces

Britain, Italy and Germany all possessed powerful navies. However, the Germany Navy did not want to operate in the Mediterranean during the war. Although in later 1941, Hitler did order submarines to enter the Mediterranean to attack the British and protect Italian shipping.^{77 78} Britain on the other hand had two large Naval forces stationed in the Mediterranean Sea. The Mediterranean Fleet under the command of Admiral Andrew Cunningham

operated out of Alexandria and generally took responsibility for the sea east of Sicily. The British H Force was based in Gibraltar^{79 80} and took responsibility for the Mediterranean west of Sicily, and cooperated closely with Cunningham's Fleet. The British K Force based at Malta came under Admiral Cunningham's command. The British Admiral in the Far Eastern Theater had responsibility for the Red Sea and Gulf of Aden.⁸¹ The Italian Navy principally concerned itself with protecting supply convoys moving between Italy and Libya. Most of these convoys delivered material to Tripoli, although some convoys delivered supplies to Benghazi or Tobruk.⁸² While the Italians possessed a sizeable Navy that included battleships and submarines, they learned quickly that the British Navy was a force to be respected. On 8 and 9 July 1940, the Mediterranean Fleet damaged the Italian Fleet off the Italian coast, while the H-Force provided a diversion off Sardinia. Then in November 1940, the Mediterranean Fleet attacked the Italian Fleet while it was anchored outside the Harbor at Taranto. British torpedo bombers severely damaged four battleships.⁸³ Throughout the remainder of the North African War, the Italian Fleet left harbor only to protect its shipping. While the British Navy controlled the inner sea, the Mediterranean was not safe for British shipping. Convoys supplying Egypt took the 13000 mile route around Cape Horn⁸⁴, while convoys supplying Crete and Malta were escorted.

Air Forces

Airpower played an important role in the early North African

campaigns, but its effectiveness varied greatly among air forces. The Italian Air Force consisted of four different type components during WW II. One component provided homeland air defense, a second supported the Navy, a third supported the Army and a fourth supported Colonial Garrisons.⁸⁵ The "Regia Aeronautica" based in Libya appears to fall into one of the latter two categories and was a separate command from the Army. These services apparently coordinated on major bombing targets, but the degree of air-ground coordination at the beginning of the war is suspect. This is best illustrated by the shootdown of General Balbo's airplane while attempting to land at an Italian airfield during the first month of the war.⁸⁶ Overall, the "Regia Aeronautica" possessed between a two and three to one advantage over the Royal Air Force (RAF) at the beginning of the war.⁸⁷ This air force consisted of two fighter wings ("stormo") flying Fiat CR32 and CR42 bi-plane fighters and one fighter wing flying the Breda Ba65 (1935 vintage, monowing, single seat attack bomber). There were also four wings flying a total of 108 SM79 tri-motor bombers. During the war the Italians upgraded their fighter fleet introducing their best fighter, the Macchi 202, in the fall of 1941.⁸⁸ This fighter was roughly equivalent to the British Hurricane or American P-40 fighters.

The Royal Air Force located in Egypt in June 1940 consisted of three fighter squadrons flying Gloster Gladiator biplanes and five bomber squadrons flying Bristol Blenheim bombers. At the

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time, the RAF had only one modern hurricane fighter in Egypt.⁹⁰ Although outnumbered, the RAF was much better organized. The air component headquarters had located with the Army headquarters in Cairo and during the war the British would perfect their system of air-ground cooperation. Air Marshall Arthur Tedder served as the principal architect of the British system of tactical air operations that would later be adopted by the Americans. Tedder initially served as the Deputy to the Air Officer Commanding-in-Chief Middle East, later becoming Commander of British Air Forces in the Middle East. During early 1941, Tedder completely reorganized air operations in North Africa. He decentralized control and implemented four major changes that proved to be fundamentally important to providing effective air support.⁹¹ First, he created a separate tactical air force in the Western Desert, leaving the defensive fighters and bombers back in the Nile Valley. Second, he established a separate command to provide aviation maintenance within the theater. Third, he divided each fighter and bomber squadron into a ground and an air element giving the squadrons the capability to leapfrog maintenance support ahead of their airplanes. This gave the RAF an important advantage throughout the North African War. Lastly, he developed an air defense group that coordinated both the actions of RAF fighters and Army air defense guns.⁹² Moreover, Tedder vigorously pushed for complete integration of air-ground operations as described by John F. Kreis.

Tedder further insisted, in the face of great resistance from the Army, that the forward

tactical air headquarters (Western Desert Air Force, commanded by Air Vice Marshal Sir Arthur Coningham) be adjacent to that of the army commander. Moreover, he created a command organization that was highly mobile and could communicate directly with the commander of subordinate groups, with supply and repair points, radar stations, the AA gun operations room, or rear headquarters.⁹³

Although small at the outset, the RAF grew rapidly. By November 1941, the RAF in North Africa consisted of five wing headquarters and 26 squadrons and by June 1942 consisted of five group headquarters, eight wing headquarters and 28 squadrons. Also by June 1942, the U.S. Army Air Force began to arrive in theater to support the British. The first American B-24 bombers arrived in Egypt on 2 June⁹⁴ and the Ninth Air Force headquarters activated on 28 June 1942.⁹⁵ The principal aircraft flown by the British in North Africa were the Blenheim and Wellington Bombers, the Hurricane fighter⁹⁶ and 560 American P-40 fighters obtained through the Lend Lease Program.⁹⁷

The German Luftwaffe entered the war in early January 1941 when Hitler decided to strengthen the Italian position after initial British successes against the Italians.⁹⁸ He dispatched Fliegerkorps X to Sicily to strike the British Navy in the Mediterranean and help protect Tripoli.⁹⁹ On 10 and 11 January 1941, Stukas dive bombers damaged the carrier Illustrious and two British cruisers.¹⁰⁰ Initially, this Air Force came under the command of the Greek theater. When the first elements of Rommel's Afrikakorps began arriving in North Africa, the Luftwaffe provided support, but came under a separate chain of command. By the fall

of 1941, Hitler appointed Air Force Field Marshall Kesselring as Commander-in-Chief South (Oberbefehlshaber Sub). He took command of FliegerKorps X and the Italian Air Force in Libya. Under Kesselring there was a Fliegerfuhrer Africa (Air Commander, Africa).¹⁰¹ These two commanders often had competing interests. German doctrine called for air superiority to receive highest priority, but air assets were usually allocated between convoy protection and tactical air support.¹⁰² Rommel describes how this competition between strategic and tactical users of airpower affects his ground campaigns.

One thing that worked very seriously against us was the fact that the Luftwaffe in Africa was not subordinate to the Afrikakorps. As a result, fighter and ground-straiving groups were used more in a strategic role than tactically in support of the ground forces. It would have been far better for the cause as a whole if the Luftwaffe Commander Afrika had been responsible for the tactical requirements of the Afrikakorps while X Luftwaffe Corps took care of the strategic tasks.¹⁰³

Moreover, the German Air Force in Africa never fully integrated its ground operations, air defense guns and air operation as did the British under Tedder. The ability of the British to quickly move their tactical fighter support from one landing field to another and support advancing or retracting ground troops gave the British forces an important operational and tactical advantage.

Technology

Technology levels and advances played an important role in the North African war. The Italian Army defeated by Wavell lacked transport and its tanks were poorly armored and carried light guns.

Once the German Army arrived on the scene, the tables turned quickly. The German tanks proved superior to the British and their use of the 88mm anti-aircraft gun in an anti-tank role devastated British formations. The British then sought American assistance in upgrading their tank forces. First came the Stuart and the hybrid Grant tank, and later the Sherman tank. There were also dramatic improvements in the combat aircraft from 1940 to 1942. The Italian and British bi-planes and mid-1930s fighters would disappear quickly. The Royal Air Force would defeat the Italian Air Force, effectively eliminating high altitude bombing and the air war would be fought predominately by fighter aircraft. The British again requested American Lend Lease Assistance to provide the P-40 fighter to help them build a more modern force of tactical fighters. The arrival of the Ninth U.S. Air Force in the summer of 1942 advanced the technology level further by introducing the new B-24 and B-25, heavy and medium bombers. These aircraft would play an important role in striking Rommel's supply lines and in supporting Montgomery's attack at El Alamein. But at El Alamein, the United States would learn that its tank guns and ammunition supplied to the British were still inferior to those of the Germans. Then LTC George Jarrett of the U.S. Army Ordnance Corps describes his observations as he traveled across the El Alamein battlefield immediately after the battle:

"Along the coast road and practically at the front of the mosque, was a huge collecting point. Here, all sorts of wrecked Allied and captured Axis equipment was being dragged in.

Being interested in how our new M4s had made out in the battle, I spent several hours at this salvage park examining the wrecked, yet salvageable M4 tanks. Once more the positive fact was clearly and indelibly emblazoned across the skies of the future. The Germans had out-gunned us, in spite of the fact that we had won the battle. Again, did I realize that, had Rommel had his gas so that his armor could have maneuvered 100%, we undoubtedly would have had far greater tank losses.".....
.....
....."Those M4s dragged into the park were a sorry mess and their crews were largely all dead due to having lesser potential guns weren't by any means a match for the comparable German guns."¹⁰⁴

The North African campaigns show how superior technology gave each force important advantages at various times, how they employed their technology to advantage, and how each side altered its tactics to compensate for particular weaknesses. The North African campaigns demonstrated the importance of Generalship and operational art, but they also showed how important it is to pursue technological superiority and incorporate new technological advances into modernization of field forces.

Command Structure

Throughout the North African War, the British force had unity of command, while the Italian and German forces never approached achieving the same degree of cooperation between service components. The British had unity of effort starting right at the top with the establishment of their Middle East Command in 1939 that brought together land, sea and air power. In 1940, General Wavell described this command structure this way:

The Middle East Command comprises Egypt, the

Sudan, East Africa, British Somaliland, Palestine, Iraq and Aden. There is an Air Officer Commanding-in-Chief, who has the same area of command. His headquarters, and mine, are in the same building in Cairo, and we work in the closest co-operation, to combine the military and air forces in the Middle East. We have also close relations with the Admiral commanding in the Mediterranean, and the Admiral commanding in the Indian Ocean and the Red Sea. There is a Joint Planning Staff which considers all problems in the Middle East from the point of view of the three Services.¹⁰⁵

Although this command was more of a partnership between the services and had no designated supreme commander, it achieved its purpose of unifying the war effort. Moreover, the tremendous British progress in integrating air and ground operations extended all the way down from the theater through operational to the tactical level. Conversely, both the Italians and Germans kept their air forces under distinctly separate chains of operations and never created any type of command and control headquarters to effectively integrate them.

There also existed very significant differences in the way that these coalition commands reported to the highest military and political leadership. Although the British Commanders-in-Chiefs were jointly responsible for the theater, Wavell acted as permanent chairman and reported directly through the Chief Imperial General Staff (CIGS) to the Prime Minister. Italian forces had a similar arrangement in 1940. But once the Germans entered the war, the German-Italian coalition never achieved unity at the highest levels. Rommel as commander of the Afrikakorps reported to the Commander of the Italian North African Command, who reported to the

"Comando Supremo" in Rome.¹⁰⁶ The German High Command provided a liaison officer to the Comando Supremo. In practice, there existed tremendous friction between Rommel and the senior Italian Commanders^{107 108 109 110}, and both Hitler and the German High Command had given Rommel authority to act with "complete freedom of action" regardless of what the Italians directed.^{111 112} This authority helped Rommel to impart initiative and offensive spirit into the North African campaign, but it did little to build cohesion or unity of command within its coalition. Unity of command was further degraded by the separate lines of command established for the Luftwaffe. The Air Commander Africa reported through Luftwaffe channels directly to Field Marshall Kesselring in Rome.¹¹³ There was no formal integration of the air and ground components at the highest levels either in North Africa or in Rome. In fact, the German air and ground headquarters were usually separated by great distances in North Africa.¹¹⁴

Intelligence and Deception

Commanders on both sides in North Africa relied heavily on aerial reconnaissance and tactical radio intercepts for reconnaissance. In fact, upon arriving in North Africa on 12 February 1941, Rommel immediately conducted an extensive aerial reconnaissance flight east of Tripoli for almost 300 miles.¹¹⁵ Thus, control of the air could at times deny the other side of intelligence. Because existing maps of Libya dated back as far as 1915,¹¹⁶ both sides used aerial photography to obtain detailed information on critical areas such as ports, airfields, and troop

concentrations. Both sides also relied upon patrols to provide tactical intelligence. This was one of the primary missions assigned to the British Long Range Desert Patrol unit. Beginning in 1940, the British also began to break the codes of the German Enigma machine and produce special strategic intelligence under the "Ultra" program. Some of this information began reaching the Middle East Command in early 1941.¹¹⁷ However, the German codes were not broken on a routine basis until late 1941 and 1942.¹¹⁸

¹¹⁹ Although the British had Ultra, one of the harshest criticisms of General Claude Auchinleck is that he failed to adequately use this intelligence to strategic and operational advantage during the 14 months he commanded the Middle East Theater.¹²⁰ However, by mid-summer 1942, Ultra information was available and used on a regular basis.

Both sides incorporated deception into their operations. One of the more common forms practiced in the desert was the use of dummy tanks. Upon his arrival in North Africa, Rommel had these constructed upon small Volkswagen cars and sent forward to deter the British.¹²¹ The British practiced similar ruses and at one time simulated an entire brigade with dummy tanks.¹²² Prior to the Second Battle of El Alamein, the British used dummy tanks, increased signal traffic and the construction of a pipeline to deceive the Axis into believing that the British main attack would come in the south rather than the north.¹²³

Logistics and Combat Service Support

The early North African Theater presented both sides with unique logistical challenges. The mobile warfare and desert environment required continuous supplies of water, fuel, ammunition, repair parts and maintenance services. British material moved to the theater principally along external lines of supply over the 13000 mile route around Cape Horn.^{124 125} The Axis side enjoyed relatively short internal lines of supply that flowed directly from Europe across the Mediterranean Sea to North Africa.¹²⁶ Although the Axis powers appeared to have a strategic advantage in sustaining their North African forces, logistical failures contributed to their final defeat. On the other hand, the British overcame the strategic advantage to field and support a force that achieved decisive victory at El Alamein.

The Italian and German forces in North Africa required approximately 70,000 tons of supplies per month¹²⁷ of which Rommel's two German divisions required about 20,000 tons per month.¹²⁸ Italy moved these supplies across the Mediterranean principally to the ports of Tripoli, which had a capacity of 45,000 tons per month.¹²⁹ The Axis forces then moved these supplies from Tripoli to the front mainly using truck transport. This distribution system had tremendous disadvantages and inefficiencies. First, supplies had to move over tremendous distances which varied from 450 miles (one way) when fighting in the Western Cyrenaica to 900 miles in the Eastern Cyrenaica to 1200 miles at El Alamein. Secondly, it is estimated that truck

transports consumed 35 to 50 percent of the Axis fuel supply.¹³⁰ Third, this system required a tremendous number of trucks and lorries. The inherent inefficiencies of this system caused supplies to back up in the port of Tripoli. During most of 1941, the Italians delivered sufficient supplies to Tripoli, but much of this material never made it to the front.¹³¹

The Axis forces also made use of the smaller ports of Benghazi and Tobruk when they controlled them, especially during 1942. Benghazi and Tobruk had capacities of 22,000 and 18,000 tons per month respectively.¹³² However, both of these ports had very limited capacity to receive convoys from Italy and were within the Umbrella of British air operations.¹³³ Although the Axis made use of some small coastal shipping to move supplies forward from Tripoli to Benghazi and Tobruk,¹³⁴ it was not sufficient.¹³⁵ Thus, the Italians and Germans faced a major logistical dilemma in North Africa. If they brought supply convoys into the safe harbor of Tripoli, they had to overcome a long and inefficient distribution system to get the supplies to the front. If they sent convoys east to Benghazi or Tobruk, they exposed the ships and logistical operations to the British sea and air attacks.¹³⁶

In the final analysis, the Italian and Germans never overcame these problems. Their inability to move supplies efficiently to the front and Rommel's aggressive conduct of offensive operations beyond his resources contributed directly to their defeat at El Alamein.¹³⁷ After visiting North Africa during 1942, LTC Jarrett wrote:

The British were so badly in need of material support that in a sense they had to use anything serviceable on which they could lay their hands. Their entire 8th Army was equipped with all sorts of arms, while they fought off a German Army equipped with the finest and most serviceable and efficient material I ever saw. Fortunately, the Germans at all times in Libya and Egypt were always short munitions and fuel to drive their mechanical equipment. It saved the British Army.¹³⁸

British success in building and sustaining their forces in the Middle-Eastern Theater can be attributed to their pre-existing network of bases, their ability to secure sea and air lines of communications, the Lend-Lease Program and their capacity to move supplies forward to the front. Britain's extensive colonial holdings in British Somaliland, Sudan, Palestine and Iraq as well as her treaty with Egypt provided an infrastructure of bases that helped move supplies and fuel to North Africa.¹³⁹ Furthermore, by April 1941 Britain controlled the Red Sea and Gulf of Aden giving her a long, but relatively secure sea line to Egypt.¹⁴⁰ Britain also established the Trans-African Air Reenforcement Route from the Gold Coast through Nigeria and Khartoum into Cairo. This air line of communication helped to deliver over 5000 fighter and bomber aircraft during the North African campaigns.¹⁴¹ Moreover, Britain received large amounts of material to include tanks and aircraft through the Lend-Lease Program which was authorized by the American Congress in March 1941.¹⁴² Finally, the British were more successful than the Axis forces at moving supplies to the forward units. Britain had built a railroad as far west as Mersa Matruh. This gave the

British a major advantage over the Germans and Italians who had no coastal railroads. By mid-1942, the British had also constructed pipelines to move water and fuel either west or inland the from coast,¹⁴³ and had extended their railway as far west as Sollum.¹⁴⁴ British naval and air strengths also made it possible for the navy to deliver supplies to small ports in the Cyrenaica such as Tobruk, Bardia and Sollum with little threat of interference.

The use of captured material by both sides became an important logistical reality throughout the campaigns. Both the British and Germans made use of the tanks, gun systems and trucks that they captured from the other side. For example, Rommel's capture of Tobruk in June 1942 yielded 2000 British vehicles, 5000 tons of supplies and 1400 tons of fuel.¹⁴⁵

Lastly both sides relied heavily on maintenance support to overcome the arduous desert conditions and battle damage. Engines and guns required intensive maintenance and early replacement due to exposure to sand.¹⁴⁶ ¹⁴⁷ Tank engines lasted for only 300 to 900 miles,¹⁴⁸ ¹⁴⁹ and many aircraft parts had to be replaced after only a few hours use.¹⁵⁰ Also, tank recovery and rehabilitation proved to be important capabilities that could return up to 65% of all battle damaged tanks to operation.¹⁵¹ In this, the Germans showed greater resourcefulness and talent than the British for they had produced specially designed tank recovery transporters.¹⁵²

The German, General von Ravenstein, probably gave the best commentary on logistics in this theater when he described North Africa as "a tactician's paradise and a quartermaster's hell."¹⁵³

ITALIAN versus BRITISH CAMPAIGN

June 1940 to February 1941

War came to North Africa on 10 June 1940, when Mussolini announced that Italy would join the European War at midnight.^{154 155} In Egypt, General Wavell had encouraged his commanders and staff to move away from the previous British policy of "non-provocation" and to plan to be at war within six months.¹⁵⁶ Wavell's guidance resulted in the preparation of war plans and a general readiness for war. As early as April 1940, the British fleet at Alexandria had been reinforced and the 7th Armored Division sent west from Mersa Matruh to its war stations along the Egyptian frontier.^{157 158}

Wavell did not wait for the Italians to attack, he directed that British forces move against the enemy immediately. One hour after midnight, the British fleet set sail west along the Libyan coast and then north to the Italian Heel.¹⁵⁹ The fleet lost the cruiser Calypso to an Italian submarine,¹⁶⁰ but otherwise met no resistance. On land, patrols of the Western Desert Force breached forward wire obstacles and attacked forward Italian outposts.^{161 162} And in the air, 35 Blenheim bombers attacked Italian planes on the ground at El Aden on the morning of 11 June.¹⁶³ The Royal Air Force met no enemy planes, although three aircraft were lost due to anti-aircraft fire. On 14 June, the RAF continued bomber operations and a flight of gladiator fighters downed an Italian Fiat CR32 fighter and a Caproni CA310 bomber over Fort Capuzzo about 10 miles west of Sollum.¹⁶⁴ Early British

action worked to advantage as Italian anti-aircraft gunners shot down Marshall Balbo over Tobruk on 28 June.¹⁶⁵ Marshall Graziani then took his place as Commandante Superiore. In July, Wavell supported the proposal of Major R. A. Bagnold and created the British Long Range Desert Group^{166 167} which would cause Graziani to tie up thousands of soldiers protecting forts, convoys, and oases during the next six months.¹⁶⁸ Also, in July the Navy protected a convoy reinforcing Malta and turned away the Italian fleet in an engagement off Calabria, Sardinia.¹⁶⁹ Such successes combined with the sinking of the French Fleets at Oran and Dakar and the British attack on Taranto in November, established British Naval strength in the Mediterranean. After 1940, the main threats to British sea control in the Mediterranean would come from land based German and Italian air and from the Italian ability to surge their ships and aircraft to run convoys between Italy and Tripoli. The Royal Air Force had even better success, soundly defeating the Italian Air Force in the first major Allied victory of the war. By the end of January 1941, the Royal Air Force had shot down approximately 150 of approximately 300 Italian aircraft.^{170 171} They would also force the Italians to give up all high altitude bombing.

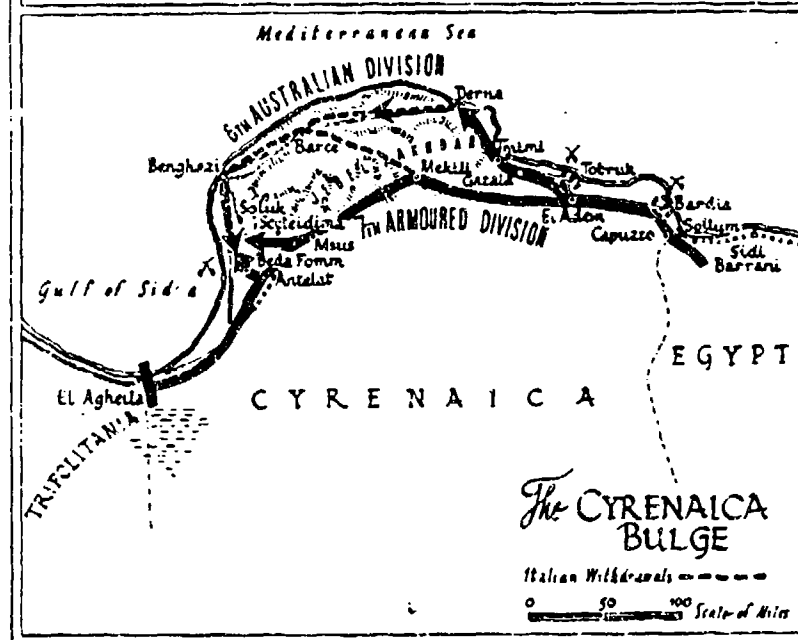
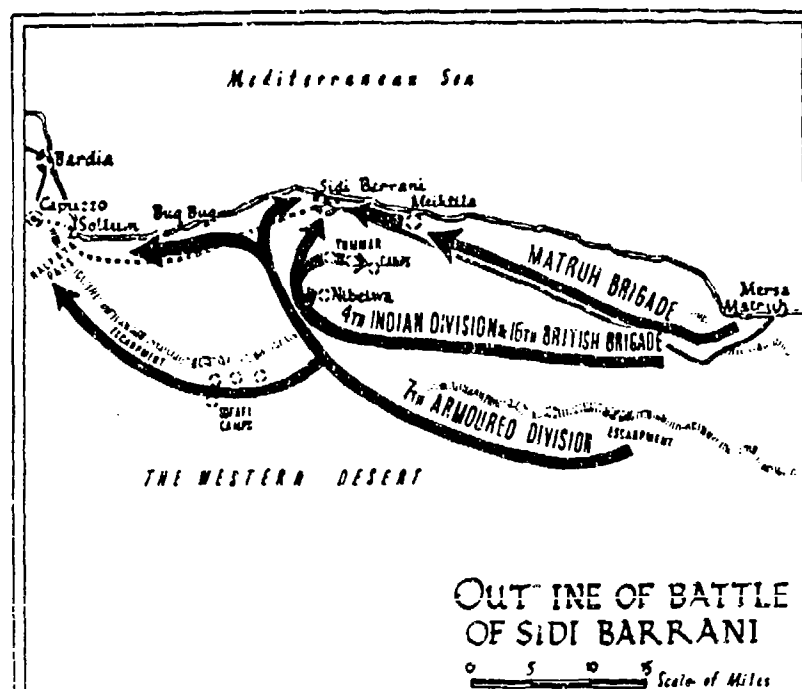
Meanwhile in the East African theater of operations, the Italians invaded and overran British Somaliland during August. To deal with this threat, Wavell supported a secret insurgency aimed at overthrowing the Italian colonial government in Ethiopia.¹⁷² A retired British Army Colonel, Dan Sanford, led a small force of

irregular soldiers into Ethiopia to organize a rebellion. Moreover, the deposed emperor, Haile Selassie, would travel from England to Khartoum to position himself for a return to power.¹⁷³

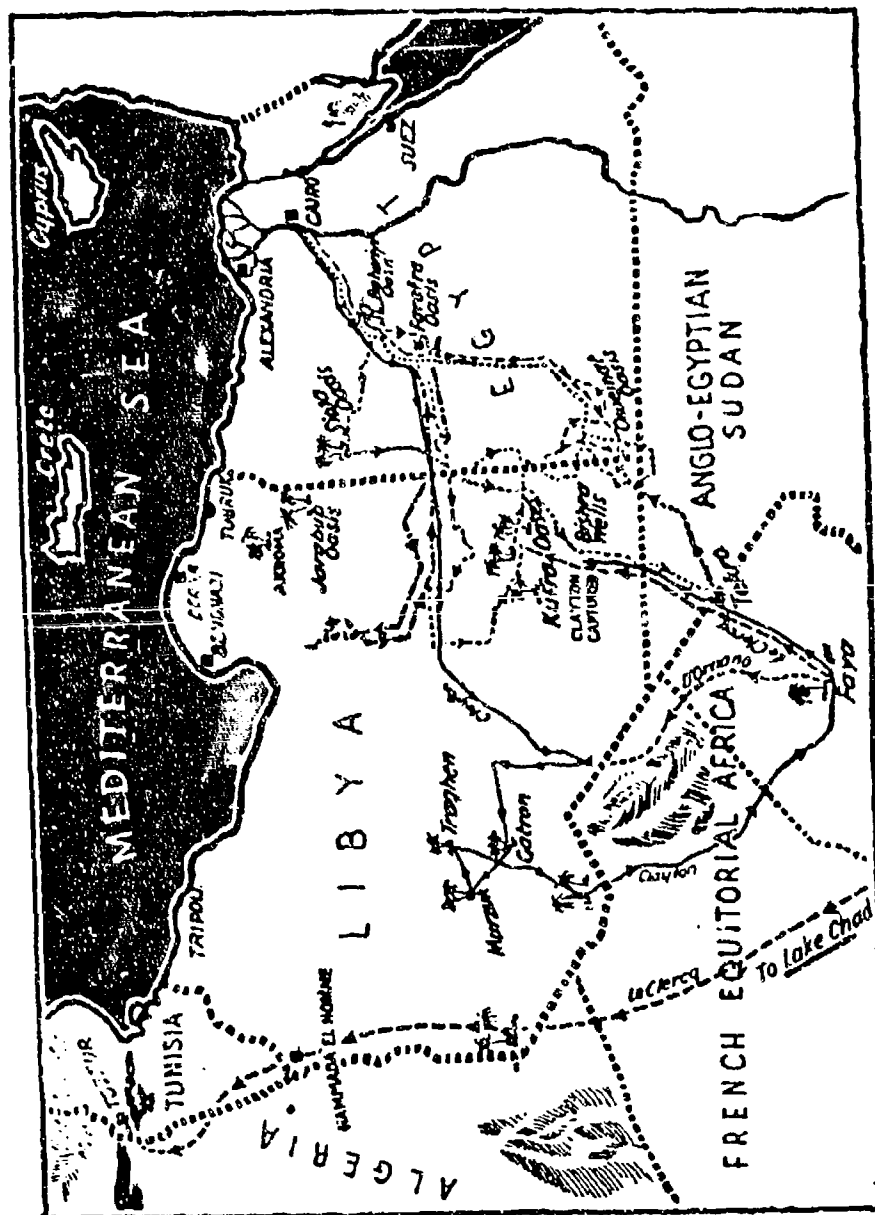
In response to initial British successes in North Africa, Mussolini urged Graziani to attack. Graziani resisted. He recognized that his forces needed more equipment and training.^{174 175} But Mussolini persisted and demanded Graziani take the offense as part of the overall axis war effort.^{176 177} On 10 August 1940, Mussolini wrote to Graziani explaining his reasons for the invasion of Egypt and outlining the limited kind of offensive he would accept:

The invasion of Great Britain has been decided on, its preparations are in the course of completion and it will take place. Concerning the date, it could be within a week or within a month. Well, the day on which the first platoon of German soldiers touches British territory, you will simultaneously attack. Once again, I repeat that there are no territorial objectives, it is not a question of aiming for Alexandria, nor even for Sollum. I am only asking you to attack the British forces facing you. I assume full personal responsibility for this decision of mine.¹⁷⁸

Thus on 13 September 1940, the 10th Italian Army crossed the Libyan Frontier and advanced approximately 50 miles to a position just west of Sidi Barrani. There, Marshall Graziani halted the advance and began to build fortifications. Against this backdrop, the light covering force of the Western Desert Force had delayed and then retreated in accordance with the British plan to resist an overwhelmingly larger force. In three months of fighting, the covering force and Long Range Desert Patrols had inflicted 3500



179.



MAP 3.—The operation of British patrols in the Inner Desert and the progressive expulsion of the Italians from all the oases.

Italian casualties and taken 700 prisoners at a cost of only 150 friendly casualties.¹⁸¹

While the Italians waited, Wavell received some reinforcement of troops and aircraft and continued to refine his plan for a counterattack. On 20 October, he instructed LTG Wilson and MG O'Connor to prepare for a two-prong attack on the Italian camps using the 7th Armored Division and the 4th Indian Division.^{182 183} This was intended to be a limited operation of short duration.¹⁸⁴ Wilson and O'Connor worked on the plan while Wavell flew to Khartoum with Antony Eden to meet with South African Prime Minister Smuts concerning both East African and North African situations.¹⁸⁵ Upon Wavell's return, Wilson and O'Connor proposed that the plan be changed to a single axis of attack that would put the main bodies of both divisions through a 15 mile gap in the Italian line of forts.^{186 187} Wavell approved the plan and preparations began immediately with rehearsals and staging of supplies caches in forward areas.

The Western Desert Force began its approach march from Mersa Matruh into the Western Desert on 6 December.¹⁸⁸ In a bold, daring plan, a British force of 31000 soldiers, 275 tanks and 120 guns attacked an Italian Army of 80000 under protection of British air cover.¹⁸⁹ Prior to the attack, Wavell sent the following message to his commanders and soldiers which stated in part:

In everything but numbers we are superior to the enemy. We are more highly trained, we shoot straighter, we have better equipment. Above all we have stouter hearts and greater traditions and are fighting in a worthier

cause.¹⁹⁰

On the night of 8 December, the 4th Indian Division closed to within 15 miles of the Italian camps at Nibeiwa, and at 0700 hours on 9 December the attack began.^{191 192} The 4th Indian Division rolled up to Italian base camps along the Mediterranean coast while the 7th Armored Division isolated and captured the Sofafi camps to the south and pursued the Italians westward. The Italians were surprised. When they were able to fight back, the British Matilda tanks withstood their artillery fire and quickly defeated the thin-skinned Italian tanks.^{193 194} Within six days, the British drove the Italians out of Egypt, retook Sidi Barrani and the small harbor of Sollum, and captured 38000 prisoners, 73 tanks, and 235 guns.^{195 196} Now Wavell withdrew the 4th Indian Division for deployment to Sudan and substituted in its place the newly arrived 6th Australian Division.¹⁹⁷ He also decided to continue the attack. With the 7th Armored Division acting as a blocking force, the 6th Australian Division captured Bardia on 3 January 1941 and then the port of Tobruk on 22 January.^{198 199} These stunning victories yielded 75000 additional prisoners, over 100 captured tanks and 500 guns.²⁰⁰ Moreover, the capture of these small harbors and the port of Tobruk greatly eased resupply problems.

Wavell flew to Mekili to confer with Wilson and O'Connor on 3 February²⁰¹ and together they decided to continue the pursuit, despite the risks that they might exceed their ability to logistically support operations. The 7th Armored Division then advanced from Mekili across the unfamiliar terrain south of the

Jebel Akhdar Mountains. The intent was to cut off the Italian forces which were retreating along the coastal road north of the mountains and were pursued by the Australians. At mid-day on 5 February, lead elements cut the coastal road near Beda Fomm and held the road until reinforced.²⁰² The Italians attempted several breakouts on 6 February and again the next day, losing about 100 tanks.²⁰³ Although the Italians greatly outnumbered the British, almost 20000 of them surrendered in mass on the morning of 7 February.^{204 205}

Thus, the British Armed Forces won a great victory very early in World War II. This campaign illustrates a classic example of maneuver warfare. With two under strength divisions, Wavell attacked a static enemy and defeated an Army that had grown to ten divisions, capturing 130,000 prisoners, 400 tanks and 1,300 guns.²⁰⁶ This campaign stands as an excellent example of how to execute successful combined and joint operations. The outcome probably would have been different without the participation of the 4th Indian and 6th Australian Divisions. Moreover, the British Navy and Royal Air Force facilitated the great victory by achieving air and sea control, providing supporting fires and assisting in the logistical support of the land force. Additionally, this campaign illustrates how the theater Commander-in-Chief effectively used "irregular" forces (special operations) to achieve economy of force in the East African theater of operations and to harass the 10th Italian Army deep in its operational rear. British success can largely be attributed to better generalship that applied

operational art to achieve victory through maneuver, whereas the Italians undertook their offensive without clear objectives and relied upon a static defense of fortifications to consolidate their gains. The rapid defeat of the Italian air force and the superiority of British Matilda and Cruiser tanks over the thin-skin Italian vehicles also contributed to the British success. In the end, leadership at the tactical level and the courage of the individual British soldier made a difference. The Italian soldiers that surrendered at Beda Fomm greatly outnumbered the British troops, yet they simply surrendered in the face of British determination and persistence. The uniqueness of this great victory is reflected by the fact that such a stunning win through maneuver warfare would not be achieved again in the North African theater.

GERMAN / ITALIAN versus BRITISH CAMPAIGNS

February 1941 to July 1942

ROMMEL'S FIRST OFFENSIVE

With the defeat of the 10th Italian Army in the Cyrenaica, the North African War entered a new period. During the next 17 months, the Germans would enter the war and the opposing armies would seesaw back and forth across the Cyrenaica. This period begins with the introduction of German forces into North Africa and ends with the First Battle of El Alamein in early July 1942.

The overwhelming British victory in the Cyrenaica had two important consequences. First, the British national leadership saw this as an opportunity to free forces to strengthen Greece against an expected Axis attack. Secondly, Adolf Hitler decided that his Italian ally must be assisted to prevent the complete collapse of the North African theater. Moreover, as these strategic events occurred, the British Middle-East Command began its campaign to liberate East Africa and then carried out campaigns in Iraq and Syria. These developments placed diverse demands upon the British Middle-East Command in early 1941 that greatly altered the meaning of the initial British victory.

As early as November 1940, Winston Churchill had cabled Wavell addressing the need to help Greece resist the expected Axis invasion.²⁰⁷ Similarly, the subject of assisting Greece had come up during Sir Antony Eden's during October 1940.²⁰⁸ As the Italian Army surrendered in early February 1941, Wavell's field commanders began initial planning for a drive to Tripoli where they could

seize the Italian base of operations and take control of all of North Africa. But on 12 February 1941, Churchill cabled Wavell directing that the Western Desert should be consolidated and that preparations should begin to dispatch the largest possible force to Greece.^{209 210} Churchill stressed, "your major effort must now be to aid Greece and/or Turkey. This rules out any major effort towards Tripoli" ²¹¹ Also on 12 February 1941, Antony Eden and British CIGS, General John Dill, left England to visit Egypt and impress upon Wavell these new strategic priorities.²¹² Eden, Dill and Wavell then flew to Athens to plan for the reenforcement of Greece.²¹³ Thus, the British Expeditionary force began sailing for Greece on 5 March and had assigned to it the 6th and 7th Australian Divisions, the 2nd New Zealand Division, a reenforced brigade from the 2nd Armored Division and the 1st Polish Brigade.²¹⁴ The 7th Armored Division was withdrawn to Egypt leaving only the 9th Australian Division east of Benghazi, half of the British 2nd Armored Division at Mersa el Brega, the 3rd Australian Brigade at Tobruk and an Indian motor brigade at Mechili.^{215 216} The units that remained in the Western Desert were the least experienced and much of their equipment had been sent to Greece. Moreover, the Western Desert Force became a Garrison Command and LTG Phillip Neame became Military Governor of Cyrenaica. Wavell put General Wilson in charge of the British Expeditionary Force to Greece and pulled O'Connor back to replace Wilson as Commander of British Troops.

Meanwhile in Berlin, Hitler had become concerned about the

events in North Africa and on 11 January 1941 had issued Directive Number 22 that stated that Germany would "assist Italy in North Africa."²¹⁷ Hitler assigned this task to LTG Erwin Rommel and provided him with the 5th Light Division and the 15th Panzer Division to form the German Afrikakorps (DAK).²¹⁸ The German Army Chief of Staff, Field Marshall von Brauchitsch, instructed Rommel that his mission would be to assist the Italians in establishing a forward defense for Tripolitania near Sirte.²¹⁹ The German High Command also told Rommel that he would be subordinate to the Italian Commandante Superiore (Italian C-in-C, North Africa), General Gariboldi, but they also gave Rommel the leeway to contact Hitler directly if German interests were threatened.²²⁰ Rommel would use this authority frequently during the next two years.

Rommel arrived in North Africa on 12 February 1941 and immediately conducted an aerial reconnaissance of Eastern Tripolitania. The 3rd Reconnaissance Battalion of the 5th Light Division arrived in Tripoli on 14 February. The deployment timetable called for the 5th Light Division to close by mid-April and the 15th Panzer Division to close by mid-May.^{221 222} Despite its name, the 5th Light Division included heavy forces such as the 3rd Reconnaissance Battalion, antitank units (including dual purpose 88mm AA guns), artillery, armored infantry, and the 5th Panzer Regiment with 70 light tanks and 80 medium tanks (Panzer II).^{223 224} The Italians had also reenforced the Libyan theater, sending the Ariete Armored Division and the Trento

Motorized Division to Tripoli in January and February.²²⁵

The arrival of Rommel and the German soldiers had an immediate effect on the North African situation. Morale among the Italian soldiers was immediately boosted when they saw the disciplined German veterans arrive,^{226 227} although the Italian senior leadership was less enthusiastic.^{228 229} Further, Rommel ordered that there be no retreat from Sirte.²³⁰ Then, he immediately sent forward the 3rd Reconnaissance Battalion and the Italian colonial 10th Corps consisting of the Brescia and Pavia Infantry Division. These units moved to the Sirte-Buerat area. He also dispatched the Ariete Armored Division to a position west of Buerat.²³¹ To deceive British aerial reconnaissance, Rommel ordered the construction and deployment of over 200 dummy tanks mounted on Volkswagon cars.^{232 233} Rommel's early encounters with General Gariboldi convinced him that he would observe formal protocol, but ignore the instructions and advice of his Italian C-in-C. In his papers, Rommel reflected on his decision to take personal command of all forces in Eastern Tripolitania.

I had already decided, in view of the tenseness of the situation and the sluggishness of the Italian command, to depart from my instructions to confine myself to a reconnaissance and to take command at the front into my own hands as soon as possible, at the latest after the arrival of the first German troops.²³⁴

Rommel's thinking illustrates two important characteristics of his leadership style. First, he frequently defied, ignored or bypassed his Italian chain of command, and he frequently ignored

instructions from the German High Command. Secondly, he always placed himself well forward on the battlefield and often took personal command of units in contact as a means of influencing the battle.

During February and March, the new situation continued to develop in North Africa. On 24 February, the German 3rd Reconnaissance Battalion encountered and destroyed two British scout cars, capturing several prisoners.^{235 236} On 19 March, Rommel flew to Berlin to report and receive new instructions.²³⁷ During these meetings, Field Marshall von Brauchitsch informed Rommel that it was not the German High Command intention to strike a decisive blow in North Africa in the near future.²³⁸ Rommel did receive permission to attack Agedabia and perhaps take Benghazi after the arrival of the 15th Panzer Division in late May.²³⁹ However, Rommel had already issued orders to the 5th Light Division to plan to an attack on Agedabia on 24 March.²⁴⁰ Moreover, Rommel felt that the entire Cyrenaica must be taken in order to hold Benghazi.²⁴¹ Thus upon his return to Africa, Rommel decided to test the waters and ordered a limited objective attack on El Agheila.^{242 243} The 3rd Reconnaissance Battalion seized El Agheila on 24 March, whereupon the British immediately retreated to Mersa el Brega. Rommel quickly sized up the situation and estimated that the British had been weakened by the dispatch of troops to Greece. He directed that an attack on Mersa el Brega be planned before the British could fortify it.²⁴⁴

Rommel's First Cyrenaican Offensive had begun and continued on



31 March 1941 with an attack on Mersa el Brega, which fell before the end of the day. As the Afrikakorps pursued the British, Rommel then determined that Agedabia should be taken. On 2 April, the 5th Light Division attacked and occupied the town. Then, British weakness began to show. The two missing brigades of the 2nd Armored Division, poor equipment readiness, and the inexperience of units and LTG Neame began to work against the British. Wavell flew to the front, countermanded Neame's orders for the 2nd Armored Division to withdraw to the east of the coastal road.^{246 247} Wavell did not want to uncover Benghazi and did not expect that Rommel would strike out across the desert.²⁴⁸ Thus, the 2nd Armored Division became divided. Moreover, Wavell summoned O'Connor from Cairo to replace Neame, but then decided to let O'Connor advise Neame.²⁴⁹ Rommel continued his advance capturing a major British supply dump at Maus²⁵⁰ and capturing both LTG Neame and LTG O'Connor on the night of 6 April as the British withdrew from Derna and Bir Tengeder.²⁵¹ Rommel continued east toward Tobruk, intent on capturing the port. Realizing the value of the port, Churchill cabled Wavell on 7 April that Tobruk was to be defended "to the death, without thought of retirement."^{252 253} The 9th Australian Division occupied Tobruk and was reenforced so that it had six infantry brigades, four artillery regiments, two antitank units, 75 antiaircraft guns, 45 tanks and a strength of 36000 troops.^{254 255} Rommel attacked Tobruk on 9 April with the 5th Light Division from the west, but the fortress held.²⁵⁶ As Rommel worked to reduce Tobruk, his 3rd Reconnaissance Battalion

cleared the remainder of the Cyrenaica occupying Bardia on 11 April and Sollum, inside Egypt, on 13 April.

As events in Greece and North Africa unfolded in early 1941, General Wavell also planned and executed a major campaign in East Africa. Beginning in January 1941, Wavell launched a three prong offensive to liberate the Eritrea, the Somalilands and Ethiopia. On 19 January 1941, General Platt crossed the eastern border of Sudan attacking into Eritrea and northern Ethiopia. General Cunningham attacked east from Kenya on 2 February to liberate Italian Somaliland and advance into southern Ethiopia. Then on 16 march, an amphibious taskforce sailed from Aden, freed British Somaliland and attacked into western Ethiopia.²⁵⁷ Wavell also continued to support the "rebellion" inside Ethiopia. British "irregular", Major Orde Wingate, accompanied Emperor Haile Selassie during his return to Ethiopia to assume personal leadership of the rebellion.^{258 259} As the East African campaigns were drawing to a close in May 1941, Churchill gave Wavell responsibility for the campaign in Iraq. Wavell then sent a force from Palestine to rescue two Indian Divisions, restore the regent and regain control of key airfields.^{260 261}

The success of Rommel's First Offensive can be attributed to his gifted application of the blitzkrieg concept of mobile warfare, his uncanny ability to estimate the enemy situation and identify enemy vulnerabilities and to the British underestimation of the threat. In reflecting upon his decision to send so many forces from the Cyrenaica to Greece, Wavell would later write,

As things proved, I took too great a risk here, but I was certain that the Italians could never stage an effective counter-stroke and did not think that the Germans could transport an armoured force across to Libya and bring it against us as quickly as they did.²⁶²

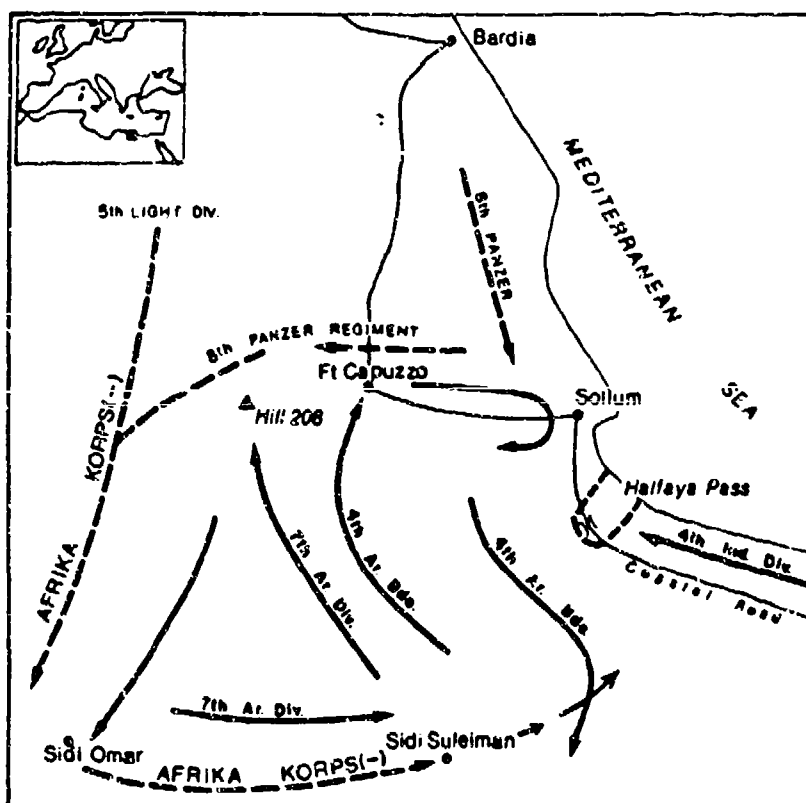
Furthermore, the British Middle-East Command was stretched too thin during early 1941 with Wavell conducting campaigns in three separate theaters of operation (Western Desert, Greece, East Africa and Iraq). Given the extent of these commitments, the British must be given credit for coordinating such diverse and widely separated military operations. However, British defeat in the Cyrenaica can be attributed most directly to the failure of both their national leadership and the Middle-East Command to correctly understand the change in the operational situation caused by German entry into the North African War and set to priorities accordingly.

OPERATION BATTLEAXE

The British reacted immediately to their defeat in the Cyrenaica. In London, Churchill ordered that 300 tanks and 100 Hurricane fighters be diverted to Egypt. He took the unusual step of ordering the Navy to escort the convoy through the Mediterranean so as to avoid the long trip around the Cape of Good Hope.^{263 264} In Egypt, Wavell set about reconstituting his Western Desert Force. He appointed LTG Berezford-Faire, former commander of the 4th Indian Division, to replace General Neame as commander.²⁶⁵ He also began reconstituting the 7th Armored Division which had been withdrawn to Egypt, and he assembled a Mobile Force under the

command of Brigadier "Strafer" Gott to help guard the frontier.²⁶⁶ Meanwhile, Rommel attacked Tobruk three more times during April and May, but achieved nothing.²⁶⁷ However, the entire 5th Panzer Division did arrive and join his Afrikakorps by the end of May. Ironically, as Britain worked to reenforce North Africa, Rommel came in for severe criticism in Berlin for exceeding the operational limits given him and overextending his supply situation.^{268 269 270}

Operation Battleaxe occurred on 15 through 17 June 1941 and would foreshadow future North African battles and reveal the successful tactics that Rommel would use again and again in North Africa. At the beginning of Battleaxe, the British outnumbered the Germans with about a 2.5 to 1 advantage.²⁷¹ British tanks numbered about 300 and included Matildas, Cruisers, and some Crusaders^{272 273 274}, and the Germans had about 160 medium tanks. The British also outnumbered the Germans in combat aircraft 244 to 139.²⁷⁵ Despite these advantages, Churchill would pressure Wavell into attacking too soon before all the tanks shipped from England could be made completely serviceable and their crews properly trained.^{276 277 278} On the other hand, Rommel would display outstanding combined arms tactics and leadership. He commanded the defense well forward. He dug in and camouflaged his 88mm antiaircraft guns and destroyed British tanks before they could range the German defenders.^{279 280} He also held his armor in reserve, allowing the British to deplete their fighting strength until the opportunity presented itself to either rout or destroy



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OPERATION BATTLEAXE

15-17 June 1941

them.²⁸²

Battleaxe began at 0400 hours on 15 June 1941 with the British intent on attacking into the Eastern Cyrenaica and seeking a decisive tank battle with the 15th Panzer Division after initially seizing Fort Capuzzo, Sollum and the high ground along the Hafid Ridge that included Hills 206 and 208.²⁸³ Prior to the battle, the RAF achieved local air superiority.²⁸⁴ Then the 4th Indian Division attacked through the Halfaya Pass where the German 88mm guns immediately destroyed eleven tanks and stopped their advance. The 4th Armored Brigade (supporting the 4th Indian Brigade) captured Fort Capuzzo on 15 June and continued toward Sollum on 16 June.²⁸⁵ The 7th Armor Brigade protected the western flank and advanced toward Hill 208 on the morning of 16 June.²⁸⁶ Using the 88mm guns, the Germans stopped two attacks upon Hill 208 and destroyed 28 British tanks.²⁸⁷ As British success threatened Sollum on the morning of 16 June, Rommel committed the 8th Panzer Regiment of the 15th Panzer Division to a counterattack against the 4th Armored Brigade. Both sides suffered heavy losses.²⁸⁸ Later, he ordered the 5th Light Division to attack south where they decisively defeated the 7th Armored Brigade at Sidi Omar.²⁸⁹ During the night of 16-17 June, Rommel reinforced the 5th Light Division's northern flank with the remainder of the 8th Panzer and other mobile forces of the 15th Panzer Division. Early the next morning, these forces attacked toward Sidi Suleiman and deep into the British rear areas and toward Halfaya.^{290 291} Wavell flew forward, but could only agree with the retreat to the Egyptian

frontier that was already underway.²⁹² During this battle, the British suffered 969 casualties and lost over 100 tanks destroyed. The German's suffered 678 casualties, lost 12 tanks destroyed and recovered numerous German and British tanks that they subsequently repaired.²⁹³

The failure of Battleaxe shocked and disappointed both the British commanders and Churchill. The British defeat can be attributed to superior German combined arms tactics, German technological superiority in weapons systems and tank recovery, the fact that British commanders remained too far to the rear, and the British decision to attack too soon.²⁹⁴ Other events taking place in Middle-East Command may have obscured Wavell's judgement with regard to Battleaxe. For during this timeframe, he oversaw the evacuation of Greece and Crete, completed campaigns in East Africa and Iraq, and undertook a campaign into Syria and Lebanon. Nevertheless, Churchill who never completely trusted Wavell,²⁹⁵ decided to replace him on 21 June with General Claude Auchinleck who was C-in-C India. In turn, Churchill sent Wavell immediately to India to fill Auchinleck's position.

OPERATION CRUSADER

A lull descended upon North Africa from June to November 1941. During this time both sides reorganized and strengthened their forces. In July, the Germans and Italians reorganized their North African Command establishing Rommel's Panzer Group Africa composed of the Afrikakorps and the 21st Italian Corps.^{296 297} Rommel converted the 5th Light Division to the 21st Panzer Division and

also began organizing the 90th Light Division (Afrika Division). LTG Cruwell took command the Afrikakorps in October and General Navarrini commanded the 21st Italian Corps. The Italians also shipped an average of 72000 tons of supplies to Tripoli during the months of July through October; however, these supplies had to be transported 1200 miles across Libya²⁹⁸ Although at least one convoy did arrive in Benghazi.²⁹⁹ The British reorganized the Western Desert into the British 8th Army consisting of the XIII Corps and the XXX Corps.³⁰⁰ Auchinleck appointed General Cunningham, veteran of the East African Campaign, as Commander of 8th Army and appointed LTG Godwin-Austin and LTG Norrie as commanders of the XIII and XXX Corps, respectively. Unfortunately, Cunningham had no experience in modern motorized warfare and would prove to be a poor choice. While the Germans had perfected their combined arms doctrine for mobile warfare, the British were still developing their concepts. Thus, the British reorganization produced an armor heavy corps and an infantry corps. The XXX Corps consisted of the 7th Armored Division, 1st South African Division and 22nd Guards Brigade. The XIII Corps consisted of the New Zealand 2nd Infantry Division, 4th Indian Division and the 1st Army Tank Brigade. At Tobruk, the 9th Australian Division had been replaced by the reenforced 70th Infantry Division. To screen the frontier, the British created battalion size taskforces known as "Jock Columns" that consisted of a motorized infantry company, a battery of artillery, a troop of antitank guns and a troop of antiaircraft guns.³⁰¹ Also during the summer of 1941, Lieutenant



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David Stirling approached LTG Ritchie, Deputy Chief of Staff Middle-East Command, with an idea for creating an Army commando unit to conduct deep raids on enemy airfields.³⁰³ General Auchinleck approved this proposal and the British Special Air Services (S.A.S.) came into existence. Meanwhile, Churchill gave priority to resupplying North Africa. During this period, North Africa received 300 Cruiser tanks, 300 Stuart tanks, 170 Matilda tanks, 34,000 trucks, 600 field guns, 240 anti-aircraft guns, 200 antitank guns and 900 mortars.^{304 305}

The situation developed with Auchinleck, Ritchie and Cunningham planning for a November offensive, and Rommel planning to break the siege at Tobruk during the same timeframe.³⁰⁶ Rommel's forces were positioned with four Italian Divisions besieging Tobruk, the 21st Panzer Division guarding the area south of Gambat and the Italian Savona Division backed up by 88mm guns guarding the frontier.^{307 308 309} The 90th Light Division and the 15th Panzer had positioned themselves east of Tobruk for the impending attack on the fortress.^{310 311} Cunningham's intent was to destroy Rommel's armor forces, relieve Tobruk and retake the Cyrenaica. He visualized two separate battles, one armor and one infantry.³¹² The XXX Corps would by-pass the frontier defenses, occupy the Gabr Saleh area, and then seize the escarpment at Sidi Rezegh in order to draw Rommel's armor into a decisive battle. The XIII Corps would fight to breach the frontier defenses and relieve Tobruk.³¹³ Overall numbers favored the British who had 118,000 soldiers, six divisions, 738 tanks and about 1000 combat

aircraft. Rommel had 119,000 soldiers and nine divisions, but only 414 tanks (including 154 Italian) and 320 combat aircraft (including 200 Italian).^{314 315 316}

The Crusader battles took place between 18 November and 8 December 1941. In the weeks prior to the battle, the RAF attacked Rommel's extended supply lines to include the repeated bombing of Naples, Tripoli, Benghazi, and Derna.³¹⁷ These attacks reduced the flow of supplies and limited the Luftwaffe to a single daily sortie per aircraft by December.³¹⁸ Also prior to the battle, the S.A.S. launched its first raid against German airfields in the Tobruk-Gazala area. This raid failed, but the S.A.S. attacked again in the Sirte-Agedabia area on 8-10 December destroying 37 aircraft.³¹⁹

The battle began on 18 November with the XXX Corps achieving surprise and advancing to Gabr Saleh on the first day.^{320 321} On 19 November, the 7th Armored Brigade took the escarpment near Sidi Rezegh while the 22nd Armored Brigade attacked toward Bir el Gobi and engaged the Ariete Armored Division. The 4th Armored Brigade remained engaged east of Gabr Saleh. Initially, Rommel did not believe that the British had launched a major offensive.³²² Therefore, he did not authorize a counterattack until 19 November. LTG Cruwell planned to attack the 4th Armored Brigade deep in the rear of XXX Corps, but the British learned of the plan and reenforced the 4th Armor Brigade with the 22nd Armor Brigade. Elements of the 15th and 21st Panzer Divisions engaged two brigades of the 7th Armored Division at Gabr Seleh on the 20 November with

both sides losing about 25 tanks.³²³ Meanwhile, the 7th Armor Brigade had captured the airfield at Sidi Rezegh and LTG Norrie decided to coordinate an attack to relieve Tobruk with a breakout by the 70th Infantry Division on 21 November.³²⁴ Thus, the stage was set for three days of intense tank battles in the Sidi Rezegh area to include the Battle of Totensonntag.^{325 326 327} On 21 November, Rommel defeated the breakout at Tobruk with a violent counterattack. The Afrikakorps then engaged the divided units of the XXX Corps and over the three days destroyed 300 tanks and disabled another 150.³²⁸ However, the Afrikakorps had also suffered heavy losses and was down to only about 100 tanks.³²⁹ Meanwhile, the XIII Corps succeeded in isolating the Axis frontier garrisons at the Halfaya Pass, Sollum and Bardia. But during this battle, Cunningham began to sense defeat, considered retreat, and asked Auchinleck to come forward for consultations. Auchinleck ordered that the battle continue, returned to Cairo dissatisfied with Cunningham, and on 26 November replaced him with LTG Neil Ritchie.^{330 331}

As Cunningham sensed defeat, Rommel sensed victory. Despite his losses, he launched a deep corps-sized raid toward the Egyptian border. He intended to panic the 8th Army into a retreat. This "Dash for the Wire" began on 24 November with Rommel and Cruwell leading the 15th and 21st Panzer Divisions moving south from Tobruk toward Gabr Saleh, then turning east and then north toward the Halfaya Pass and Bardia.³³² Although audacious, this raid achieved little and Rommel had to return to the Sidi Rezegh area to meet a

new threat from the New Zealand 2nd Division which was advancing on Tobruk.^{333 334} Between 26 November and 1 December, the Afrikakorps battled the New Zealanders and other elements of the XXX Corps during the Second Battle of Sidi Rezegh. This battle resulted in the Germans inflicting heavy casualties on the New Zealand Division and restoring the siege at Tobruk.^{335 336} Auchinleck moved to the battlefield on about 1 December and concentrated his efforts on reenforcing 8th Army. Rommel tried, but failed to relieve his frontier garrisons on 4 December, and 8th Army continued to attack near Tobruk and Bir el Gobi through 7 December.³³⁷ Unable to assist his frontier garrisons, threatened by a possible envelopment and having no way to sustain his forces, Rommel ordered a retreat to Gazala on the night of 7-8 December.^{338 339} Unable to hold at the Gazala line, he continued to El Agheila, arriving on 31 December 1941.³⁴⁰

Operation Crusader achieved its purpose, but at high costs to both sides. Britain and her allies suffered 18,000 soldier killed, wounded or missing and lost 440 tanks and about 300 aircraft.^{341 342 343} The Axis suffered 38,000 casualties (14,600 German) and lost about 360 tanks and 300 aircraft.^{344 345 346} The British had won, but mainly because Rommel could not reenforce his Army which became so badly attrited in both personnel and tanks.³⁴⁷ The British should have learned some important lessons. Their senior commanders remained too far behind the front and could not keep pace with the mobile battles. They had not mastered large combined arms formations which lead to the piecemeal commitment of

divisional units.^{348 349} Furthermore, they had choose to fight an armored corps and an infantry corps rather than mixed forces. Additionally, even though the RAF dominated the skies, its attacks were directed more at the Axis lines of communication than at its armor formations.

ROMMEL'S SECOND OFFENSIVE

On 21 January 1942, Rommel began a second offensive during which he would retake the Cyrenaica, capture Tobruk, and attack deep into Egypt to El Alamein. The operational situation had reversed itself. Rommel had been driven from the Cyrenaica and was now closer to his supply base in Tripoli. On the other hand, 8th Army had greatly distanced itself from the railhead at Mersa Matruh, now over 500 miles from the front. Despite his losses, Rommel reconstituted his forces with amazing speed. The events of November and early December had caused the Italians to make an urgent effort to push supplies across the Mediterranean Sea. On 16 and 17 December 1941, 27 Italian warships escorted four merchant ships that delivered 20,000 tons of supplies to Tripoli.³⁵⁰ The Italians repeated this feat on 6 January 1942 and escorted another six cargo ships.³⁵¹ Rommel's forces grew in strength. On the other hand, the British 8th Army secured the Cyrenaica with the widely separated and dispersed XIII Corps. The newly arrived, untrained, and ill-equipped 1st Armored Division guarded the frontier near Agedabia.^{352 353} The 4th Indian Division occupied positions near Benghazi, while the 7th Armored Division was re-equipping at Tobruk.³⁵⁴ British staff estimates

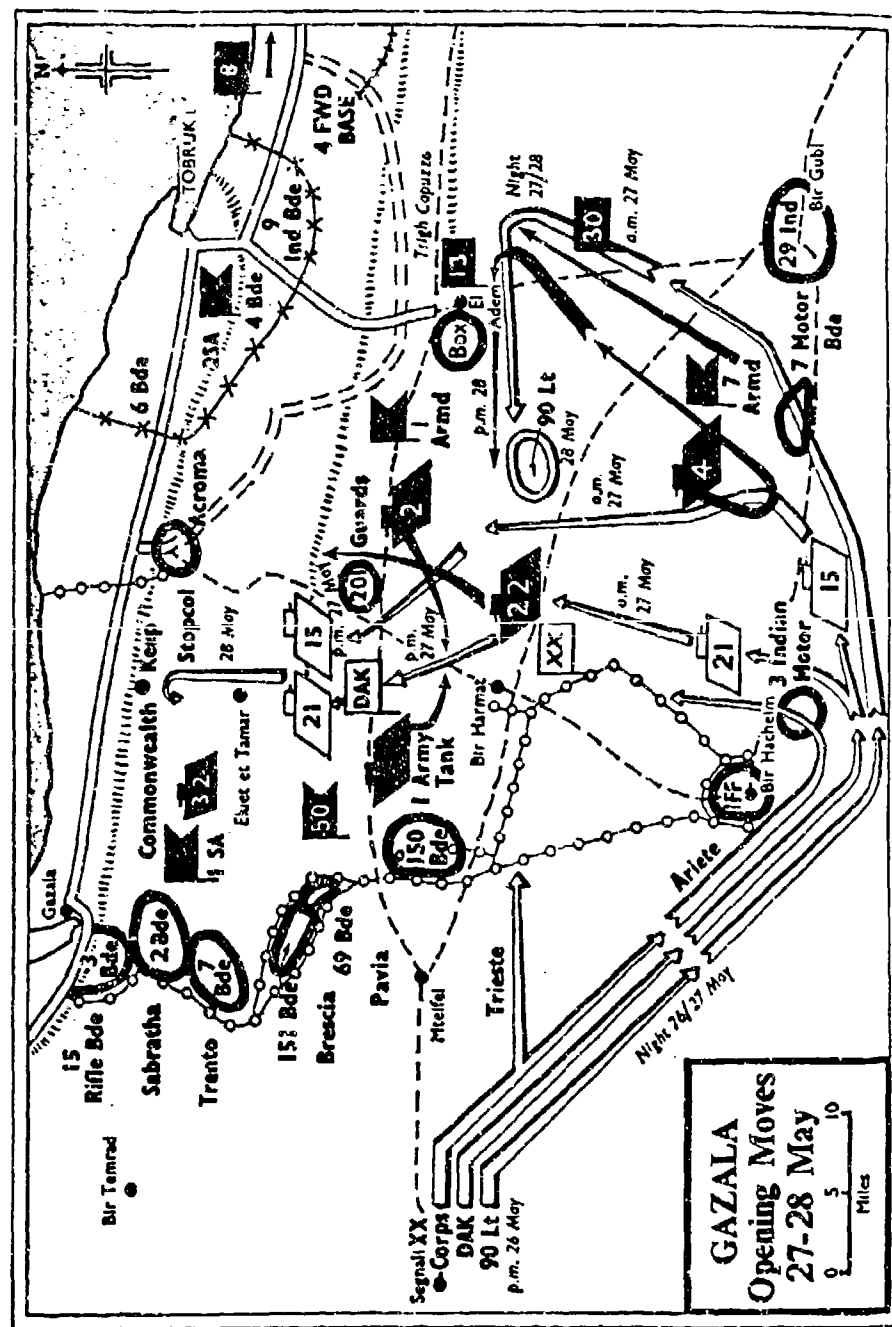
called for XIII Corps to receive 1400 tons of supplies per day, yet only 1000 tons move forward from Tobruk.³⁵⁵ Additionally, RAF bombing during Crusader had greatly reduced the capacity of the Benghazi port.³⁵⁶ Against this backdrop, Winston Churchill visited Washington, D.C. for the Arcadia Conference and proposed Operation Gymnast, a combined British and American invasion of Northwest Africa.³⁵⁷ The British 8th Army would support Gymnast with Operation Acrobat, the clearing of the Cyrenaica, sometime in the spring of 1942.³⁵⁸ Meanwhile, the German High Command and Mussolini warned Rommel that any new offensive would cause his supply lines to become overextended.³⁵⁹

In early 1942, the operational situation developed with Auchinleck and the 8th Army staff underestimating Rommel's capabilities and intentions, just as Wavell had done the year before.³⁶⁰ ³⁶¹ On the other hand, Rommel's staff detected British weakness around Agheila in early January.³⁶² Thus on 21 January 1942, Rommel attacked into the Cyrenaica with the Afrikakorps advancing on the right flank through the desert and the 20th Italian Corps and 90th Light Division following the coastal road.³⁶³ Rommel made rapid progress virtually sweeping aside the 1st Armored Division³⁶⁴ and by 22 January pushed well past Agedabia. With Benghazi threatened on 25 January, problems surfaced in the British chain of command. LTG Godwin-Austin, XIII Corps Commander, used the discretion given him by General Ritchie to order the evacuation of Benghazi.³⁶⁵ Shortly thereafter, Auchinleck and Tedder arrived at Ritchie's headquarters. Ritchie

then countermanded the withdrawal, despite the objections of the corps and division commanders.³⁶⁷ Part of the 4th Indian Division then became encircled as a result of this decision, and Ritchie finally decided to evacuate Benghazi.³⁶⁸ With the loss of Benghazi, 8th Army quickly withdrew by 6 February to the Gazala Line where they began organizing old Axis defensive positions.

The situation now settled into a four month period of preparation. Rommel had captured large stocks of British supplies³⁶⁹ and opened the port of Benghazi.³⁷⁰ However, the Italian High Command in Rome still opposed further offensive operations, and Hitler wanted to limit the offense to the capture of Tobruk only.³⁷¹ The British 8th Army prepared defensive positions along the British Gazala - Bir Hacheim Line. During this period, the new British CIGS, General Alanbrooke, suggested that Ritchie be replaced,³⁷² and Churchill pressured Auchinleck for an early offensive.³⁷³ ³⁷⁴ Auchinleck resisted attacking before he had built up sufficient combat power. But on 2 March 1942, Churchill recalled Auchinleck for consultations. Auchinleck stunned Churchill and Alanbrooke by refusing to leave Egypt.³⁷⁵ Churchill considered dismissing Auchinleck and kept him only after a delegation visited Egypt and supported Auchinleck's assessment.³⁷⁶

When the strength of British and coalition forces grew at the end of May, Rommel decided to attack. As the Battle of Gazala began, Rommel had 113,000 troops, 570 tanks (including 240 Italian) and 500 combat aircraft. The British had 125,000 troops, 740 tanks



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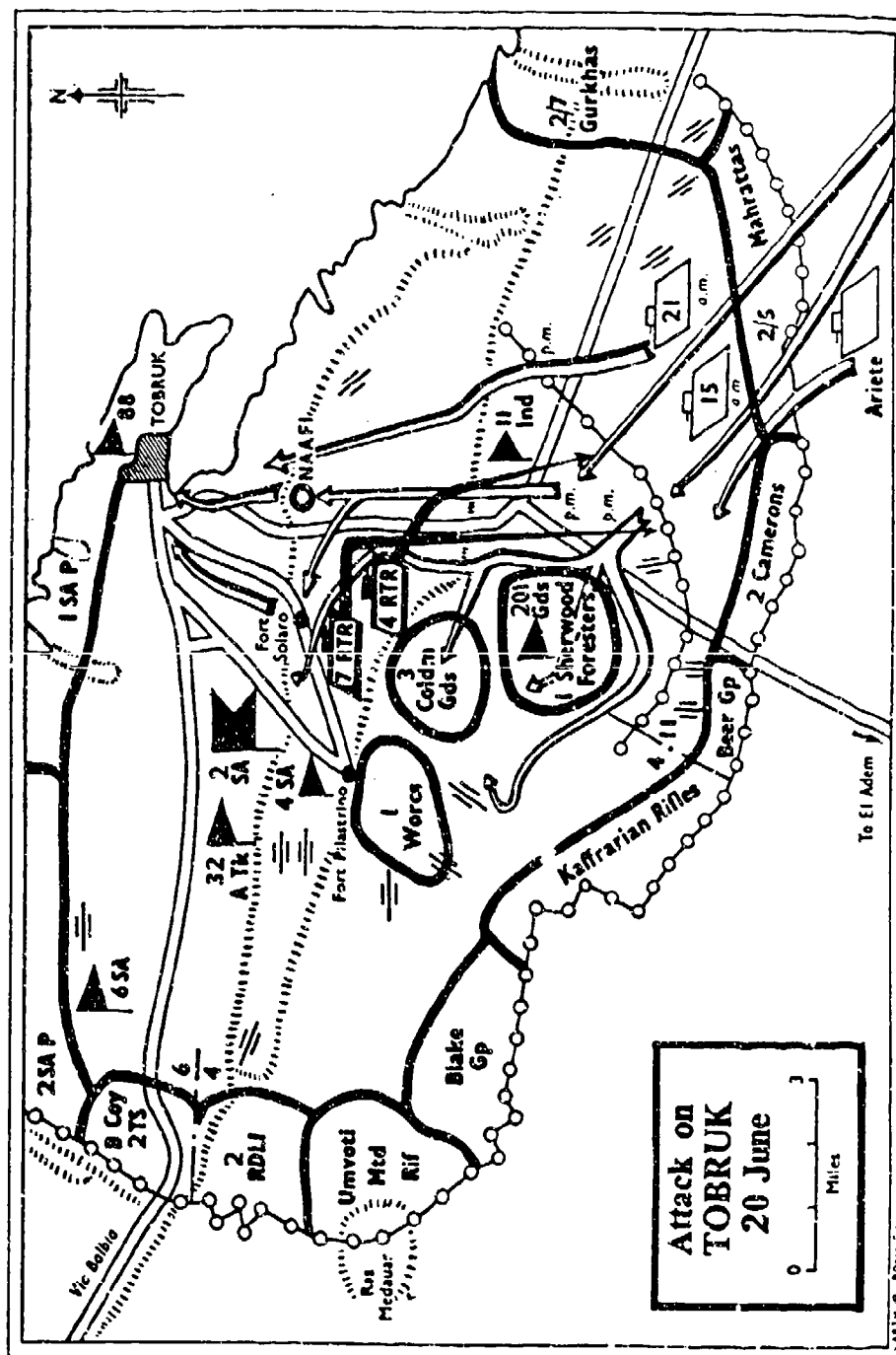
and 700 aircraft.^{378 379 380} Rommel opened the battle on the night of 26 May 1942 with a diversionary attack, while the main body of the Afrikakorps (DAK) enveloped the British southern flank. At dawn on 27 May, the Afrikakorps moved around Bir Hacheim, pushing back the 3rd Indian Brigade and attacking north toward Acroma and the coast.^{381 382} Part of the Italian Ariete Division engaged the Free French Brigade at Bir Hacheim, and the 90th Light Division moved northeast to seize El Adem, eventually becoming isolated. By the evening of 27 May, the 15th and 21st Panzer Divisions had fought their way through both the 7th and 1st Armored Divisions to the area where the Trigh Capuzzo intersects the Acroma-Bir Hacheim Trail (became known as Knightsbridge).^{383 384} For the next three days, intense tank engagements took place around knightsbridge, and the area southwest of El Adem and northeast of Bir Hacheim. Throughout the battle, the RAF attacked both Rommel's forces and his supply lines.^{385 386} Even with the Afrikakorps in their rear area, the British line held until the Italians forced a breach north of Bir Hacheim on 31 May.^{387 388} Rommel then created a corps-sized armor and artillery strongpoint known as the "Cauldron" west of the Knightsbridge intersection. Rommel resupplied his forces and forced the surrender of the Free French Brigade at Bir Hacheim. Meanwhile, the 8th Army launched piecemeal attacks on the Cauldron and suffered heavy losses.³⁸⁹ The battle raged for ten days until Rommel brokeout of the Cauldron and forced 8th Army to retreat toward Tobruk.^{390 391} Rommel describes how he advanced toward Tobruk fighting what he calls the "battle of

attrition" using a combination of offensive and defensive tactics.

During these first three weeks the battle of attrition was waged in the Western Desert in its most violent form. It began very badly for us, but in the fluctuating fighting which followed we succeeded - partly by attacks with limited objectives, partly in defense - in smashing the British formations one by one, despite the courage with which they fought.³⁹²

The Battle of Gazala represented a great victory for the Axis. It certainly equalled Crusader in magnitude and violence. The British 8th Army was reduced to 95 tanks by 13 June while the Axis had about 150 tanks remaining.³⁹³ Rommel's victory can be attributed to clear objectives, well executed combined arms tactics and great leadership.³⁹⁴ Conversely, 8th Army's defeat can be traced to a lack of clear operational objective, command and control problems, poor combined arms execution and the piecemeal commitment of armor forces.³⁹⁵

As 8th Army fell back towards Tobruk, the problems in the British chain of command surfaced again.³⁹⁶ Auchinleck instructed Ritchie to deny an Acroma - El Adem - Bir el Gobi line using mobile forces.³⁹⁷ However, Ritchie and his corps commanders, Gott and Norrie, planned instead for a series of successive withdrawals to a Tobruk line, a Gambut line, and eventually an Halfaya line.³⁹⁸ During this time LTG Gott who had replaced Godwin-Austin as Commander of XIII Corps became the dominant personality.³⁹⁹ Additionally, the Middle-East C-in-Cs had decided early in 1942 that Tobruk would not become a fortress again. Now Churchill and the War Cabinet complicated the situation by instructing Auchinleck



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to hold Tobruk.⁴⁰¹ Unfortunately, preparations similar to those of 1941 had not been undertaken for an all out defense of Tobruk. Thus, Churchill's orders complicated an already bad command situation. On about 16 June 1942, Auchinleck sent his Chief of Staff, LTG Corbett, forward to 8th Army.⁴⁰² Corbett returned to Cairo and reported 8th Army's actual situation to Auchinleck.⁴⁰³ Auchinleck issued new orders to Ritchie authorizing him to fortify Tobruk.⁴⁰⁴ The 2nd South African Division, augmented with 19,000 British soldiers and an Indian Brigade, got the mission to defend Tobruk.⁴⁰⁵ ⁴⁰⁶ Unfortunately, they lacked the artillery augmentation available in 1941. Meanwhile, 8th Army withdrew under pressure during the period 16-18 May to the vicinity of Gambut.⁴⁰⁷ Then, early on the morning of 20 June 1942, Rommel attacked Tobruk. Waves of Stuka divebombers attacked the perimeter,⁴⁰⁸ the Afrikakorps attacked from the southeast and German sappers and infantry breached the perimeter. Lacking adequate preparation, artillery or command and control arrangements, Tobruk surrendered the next day and Rommel took 32,000 prisoners.⁴⁰⁹

With the loss of Tobruk, 8th Army began a retreat to the Egyptian frontier and quickly followed that with a retreat to Mersa Matruh.⁴¹⁰ As the Afrikakorps approached, Auchinleck relieved Ritchie and personally assumed command of 8th Army.⁴¹¹ ⁴¹² Auchinleck's presence restored confidence, and the XIII Corps fought a successful delay from Mersa Matruh to the Alam Halfa Ridge Line near El Alamein.⁴¹³ ⁴¹⁴ ⁴¹⁵ During this period, Auchinleck ordered the creation of mobile battle groups within each

brigade and he sped up centralization of artillery.⁴¹⁶ He then fought off all Rommel's attacks during the First Battle of El Alamein from 30 June to 3 July 1942. After the First Battle of El Alamein, Rommel could no longer go on the offensive. In pushing beyond Tobruk and the Egyptian frontier, Rommel had exceeded a culminating point and his offensive capabilities could no longer match the power of a possible defense further to the west. Rommel's Second Offensive ended in a numerical victory. Britain had lost 75,000 men, huge stores of supplies and Tobruk, while the Axis lost about 40,000 men.⁴¹⁷ Rommel's success can be attributed to solid leadership, a clearly-defined objective of destroying the British 8th Army, and excellent execution of combined arms operations. The British suffered severe losses because they underestimated the Axis threat after, had weak links in their command team and did not successfully fight large combined arms formations resulting in the piecemeal commitment and attrition of forces. Despite its lack of success, the British 8th Army's resolute resistance and stand at El Alamein helped weaken the Afrikakorps and set the stage for the final defeat of the Axis forces in the Western Desert.

THE EL ALAMEIN CAMPAIGN

July 1942 to November 1942

The final period in the early North African campaigns began in July 1942 and ends in November 1942 with the British Victory at the Second Battle of El Alamein and the successful Allied Landings in Northwest Africa. Rommel's Second Offensive struck a devastating blow to British morale both on the home front and in Egypt. Churchill describes the feeling of loss when he learned that Tobruk had fallen while attending a conference in Washington, D.C. during June 1942.

This was one of the heaviest blows I can recall during the war If this was typical of the morale of the Desert Army, no measure could be put upon the disasters which impended in North Africa Nothing could exceed the sympathy of my two friends. There were no reproaches, not an unkind word was spoken. What can we do to help? said Roosevelt.⁴¹³

Roosevelt did help, he diverted 300 new Sherman tanks and 100 self-propelled guns from American units and sent them to Egypt.^{419 420 421} Roosevelt also continued the build up of American airpower, and the American 9th Air Force activated in Egypt during June 1942. However, upon returning home Churchill had to respond to a motion of censure calling for a vote of no confidence in his government.^{422 423} In Egypt, the 8th Army's morale hit a rock bottom low and all tactical as well as operational thinking included planning for the next withdrawal, the defense of the Nile and the possible evacuation

of Egypt.⁴²⁴ ⁴²⁵ The soldiers had lost confidence the command and blamed their senior leaders for the setbacks and defeats.⁴²⁶ Additionally, the theater commander now served as the 8th Army commander and remained in the field with the Army headquarters behind the Ruweisat Ridge.⁴²⁷ Although the C-in-C's presence in the field may have helped the tactical situation, it most probably degraded overall theater command and control.

Churchill and the CIGS, General Alanbrooke, decided that they must see the situation in Egypt for themselves. Traveling separately, they met in Cairo on 3 August 1942.⁴²⁸ Churchill left London knowing that something needed fixing in the Middle-East Command, and that some sort of shakeup might be necessary in the senior leadership structure. However, he apparently had an open mind on the subject for he had not decided before hand who, if anyone, would be "sacked".⁴²⁹ For Churchill this was an urgent and important mission. His government had almost collapsed after the fall of Tobruk, and he could not tolerate more failures in North Africa. Moreover, in late July an American delegation consisting of the Secretary of War , General Marshall, and Admiral King had visited London. They agreed to the British proposal (Operation Gymnast) for an Allied invasion of Northwest Africa (Operation Torch) in the fall of 1942, which Roosevelt then approved.⁴³⁰ ⁴³¹ For Operation Torch to be successful, the Axis had to be defeated in the Western Desert. Thus, Churchill and Alanbrooke spent the next eight days meeting with senior military leaders in the Egypt and visiting units and soldiers to include the 8th Army

Headquarters in the field.⁴³² General Wavell had flown in from India and Prime Minister Smuts from South Africa.⁴³³ During one of these meetings, Churchill became so exasperated with the explanations and excuses being offered that he uttered, "Rommel, Rommel, Rommel, Rommel! What else matters, but beating him?"⁴³⁴ Churchill and Alanbrooke agreed that changes must be made, and they discussed many alternatives to include reorganization of the Middle-East Command.⁴³⁵ Alanbrooke favored retaining Auchinleck as C-in-C and bringing in new leadership from England to command 8th Army. Alanbrooke recommended LTG Bernard Montgomery, an officer relatively unknown to the Prime Minister. Churchill decided that Auchinleck must be "sacked", and he proposed General Harold Alexander, who had been designated as Commander of the British Landing Force for Operation Torch, to be the new C-in-C.⁴³⁶ Furthermore, Churchill had been greatly impressed with 43 year old LTG "Strafer" Gott, Commander of British XIII Corps, who came highly recommended by Prime Minister Smuts and who had a good reputation within the Middle-East Theater.⁴³⁷ Churchill and Smuts persuaded Alanbrooke to accept Alexander and Gott, and Churchill relieved Auchinleck on 8 August 1942.⁴³⁸ Now, fate intervened to place Bernard Montgomery in command of the British 8th Army. LTG Gott asked to take a few days leave in Cairo before assuming command, and he boarded a Bristol Bombay bomber to fly to the rear on the late afternoon of 7 August 1942.⁴³⁹ Shortly after takeoff, German fighters shot down this airplane, and Gott was killed.⁴⁴⁰ Thus, Churchill had to fall back on Alanbrooke's

recommendation, and he immediately appointed Montgomery as 8th Army Commander.⁴⁴¹

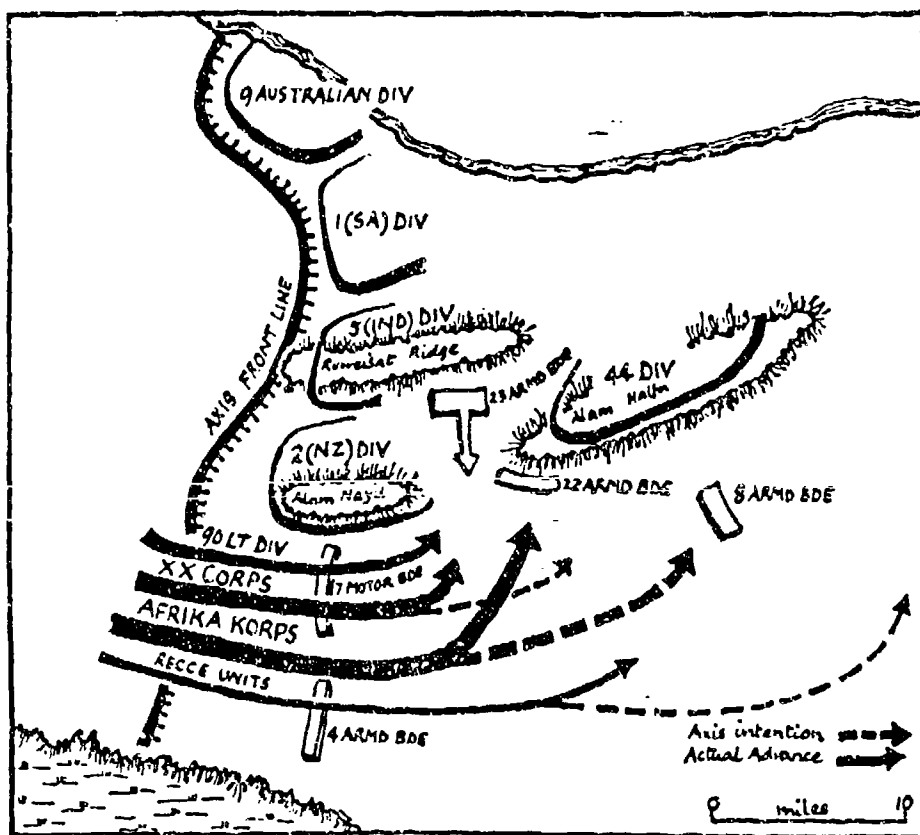
In Alexander and Montgomery, the British would finally produce a winning leadership team. Montgomery had spent much of the time between the world wars advocating modern theories of warfare, had taught at the Army Staff College at Camberly and had written an infantry manual in 1930 on command at the division through army level.⁴⁴² As Commander of XII Corps and South-Eastern Army, he had run some of Britain's largest training exercises during 1941 and 1942.⁴⁴³ Additionally, Montgomery had been one of Alexander's instructors at Camberly, and there still existed a sort of student to instructor relationship between them.⁴⁴⁴ Alexander, although a highly regarded soldier, had his most recent experience fighting retreats in India and Burma.⁴⁴⁵ Thus, Montgomery, who had the aggressive drive and new ideas, would lead 8th Army and fight the battles in North Africa. All Alexander needed to do, would be to support his old teacher.

Montgomery arrived in Cairo on 12 August 1942. He very quickly sized up the situation in 8th Army and began taking action to change the "atmosphere" and restore confidence at all levels.^{446 447} He literally seized command from Auchinleck two days earlier than scheduled.⁴⁴⁸ He then issued orders that Egypt would be defended at El Alamein, that there would be no further retreats and that all plans for further withdrawal would be burnt. He also ordered that all troops engaged in preparing defenses in the Nile Valley be sent forward and

that all transport kept at the front for withdrawal be sent to the rear.⁴⁴⁹ He instituted the doctrine, which he had taught and trained in England, that divisions would be fought as divisions. He scrapped the "battle groups" and "jock columns" of the past.^{450 451} He then ordered that forward defenses be strengthened by adding depth and mines,^{452 453} and he directed that a powerful armored corps be created similar to Rommel's Afrikakorps.⁴⁵⁴ Additionally, he moved the 8th Army Headquarters from the desert to the coast where it collocated with the Headquarters of the Desert Air Force.^{455 456} This accomplished two purposes. It improved living and working conditions for the Army staff, and it addressed the complaints of senior air officers that air-ground coordination had broken down.⁴⁵⁷ Most of these points, Montgomery put forth in an address given in the desert sands to the 8th Army staff officers on the evening of 13 August 1942.⁴⁵⁸ Montgomery's speech had a profound effect on the officers present that night and inspired purpose, hope and confidence.⁴⁵⁹ Lastly, Montgomery made a conscientious effort to visit as many units and speak to as many soldiers as possible.⁴⁶⁰ Again, he did this to help inspire and gain confidence.

As the British leadership sorted out the command and control issues, Rommel's Army and the 8th Army prepared for the next battle. The El Alamein Line laid along a narrow 40 mile strip bordered on the north by the Mediterranean Sea and on the south by the Qattara Depression. Rommel planned on attacking the

southern flank of the line to retain the initiative and to continue to demoralize the British, both on the battlefield and on the home front.⁴⁶¹ During the summer of 1942, Rommel pressed to resupply his army so that he could strike the first blow of the next battle. He recognized that the British were reenforcing their defenses with mines and that they would reenforce Egypt with troops from Iraq, Syria and India.⁴⁶² He knew that the 1st South African and 50th British Divisions had returned to the front by early August.⁴⁶³ Meanwhile, the Italians tried to meet Rommel's requirement for 100,000 ton of supplies each month.⁴⁶⁴ During the months of June, July, August and September, the Italians delivered, respectively, 32,000 tons to Tripoli, 91,000 tons to Tripoli, 51,000 tons to Tobruk and 77,000 tons to Tripoli and Benghazi.⁴⁶⁵ Tonnage were down in June due to fuel shortages for naval shipping. But in the other months, the tonnages varied, according to how far forward the Italian Navy delivered the supplies. The Italians considered the Tripoli and Benghazi ports relatively secure from British air attacks and delivered accordingly.⁴⁶⁶ Unfortunately for Rommel, the Italians never put the full monthly requirement into North Africa. Worse yet, the supplies delivered to Tripoli and Benghazi had to be moved by truck either 1300 or 800 miles to El Alamein. This distribution system further decreased the amount of supplies reaching the front. Attempts at using the British railway from Tobruk to El Duba provided only meager improvements.⁴⁶⁷ ⁴⁶⁸, Thus, Rommel's Panzer Army consumed more supplies than they received during August. It could do so only



469.

BATTLE OF ALAM HALFA 30 August - 3 September 1942

because the it still possessed stocks captured from the British at Tobruk and in Egypt.^{470 471}

The Battle of Alam Halfa took place between 30 August and 3 September 1942. Rommel hoped to deliver a demoralizing blow before the British could grow any stronger. Montgomery expected and prepared to fight a defensive battle that would buy time while 8th Army prepared to take the offense. On the night of 30 August, Rommel launched his main attack to penetrate and envelope the British southern flank, while diversionary attacks took place along the Ruweisat Ridge and coast.⁴⁷² The British 4th Armored and 7th Motorized Brigades fought delays, preventing the Afrikakorps from gaining a quick penetration of the British mine fields.⁴⁷³ Rommel almost terminated the attack, but decided instead to limit the depth of the envelopment.^{474 475} On 31 August, the Afrikakorps advanced and engaged the 22nd Armored Brigade which fought a successful defense.⁴⁷⁶ Throughout the battle, Montgomery used airpower and artillery to hammer the enemy concentrations.⁴⁷⁷ The Allied Air Force conducted extensive bombing during the nights of 30 and 31 August and during both the day and night of 1 September.^{478 479} By 1 September, the RAF had flown 2500 sorties with 500 aircraft and the American Air Force had flown 180 sorties using P-40, B-24 and B-25 aircraft.⁴⁸⁰ These air strikes inflicted heavy damage that left vast numbers of vehicles burning in the desert.⁴⁸¹ German fighters were unable to deal with the large bomber formations due to fuel shortages and Allied fighter escorts.⁴⁸² The Afrikakorps conducted limited attacks on

1 September and then began withdrawing on 2 September.⁴⁸³ Montgomery had achieved his objective and therefore did not counterattack on 2 September. Then on 3 September, he stopped a counterattack by the New Zealand forces after taking excessive casualties.⁴⁸⁴ Montgomery was deliberately conserving his fighting strength until he could go on the offensive.

Montgomery won a victory at Alam Halfa. Although losses were about equal, Montgomery had demonstrated his competence and inflicted additional attrition upon the Afrikakorps. Short of fuel and under intense air attack, Rommel ordered retreat and recognized that the British had achieved a position of superior material strength.⁴⁸⁵ During this battle, the Axis lost 2910 soldiers, 49 tanks and 41 aircraft.⁴⁸⁶ The British lost 1750 soldiers, 67 tanks and 68 aircraft.⁴⁸⁷ British use of massed artillery and air strikes during this battle would foreshadow coming events at the Second Battle of El Alamein. Montgomery's reluctance to attack would also characterized his cautious and methodical approach to destroying Rommel's Army.

During September 1942, British strength continued to grow and the Axis suffered further setbacks. Montgomery finalized his command team by bringing LTG Leese from England to command the XXX Corps.⁴⁸⁸ He had already brought LTG Horrocks from England in August to command XII Corps.⁴⁸⁹ Only Lumsden, who Montgomery had assigned to organize X Corps, had previously served in the desert.⁴⁹⁰ Next Montgomery began an extensive training program within 8th Army, and he planned Operation Lightfoot, the operation

to destroy Rommel's Army.⁴⁹¹ Also during September, the Panzer Army lost Rommel. He returned to Germany on 22 September for medical treatment and was replaced by General Stumme.⁴⁹² During his journey, Rommel stopped in both Rome and Berlin to report on the inadequacy of logistical support provided to North Africa.⁴⁹³ However, the Eastern Front still had priority, and the Panzer Army had become a victim of Rommel's deep drive into Egypt.⁴⁹⁴ Meanwhile, British material arrived from England, British allies and the United States. The first 194 of the 300 new Sherman tanks arrived on 2 September.⁴⁹⁵ By October 1942, 8th Army had 195,000 soldiers, three armored divisions, three separate armor brigades, seven infantry divisions, 1036 tanks, 900 artillery guns, and 530 combat aircraft.^{496 497 498} The Panzer Army had 104,000 soldiers (50,000 German), four armor divisions (two German), eight infantry divisions (two German), 537 tanks, 500 artillery guns, and 350 combat aircraft.^{499 500 501 502} After more than two years of war, Britain and her coalition allies had achieved superiority in material and perhaps leadership.

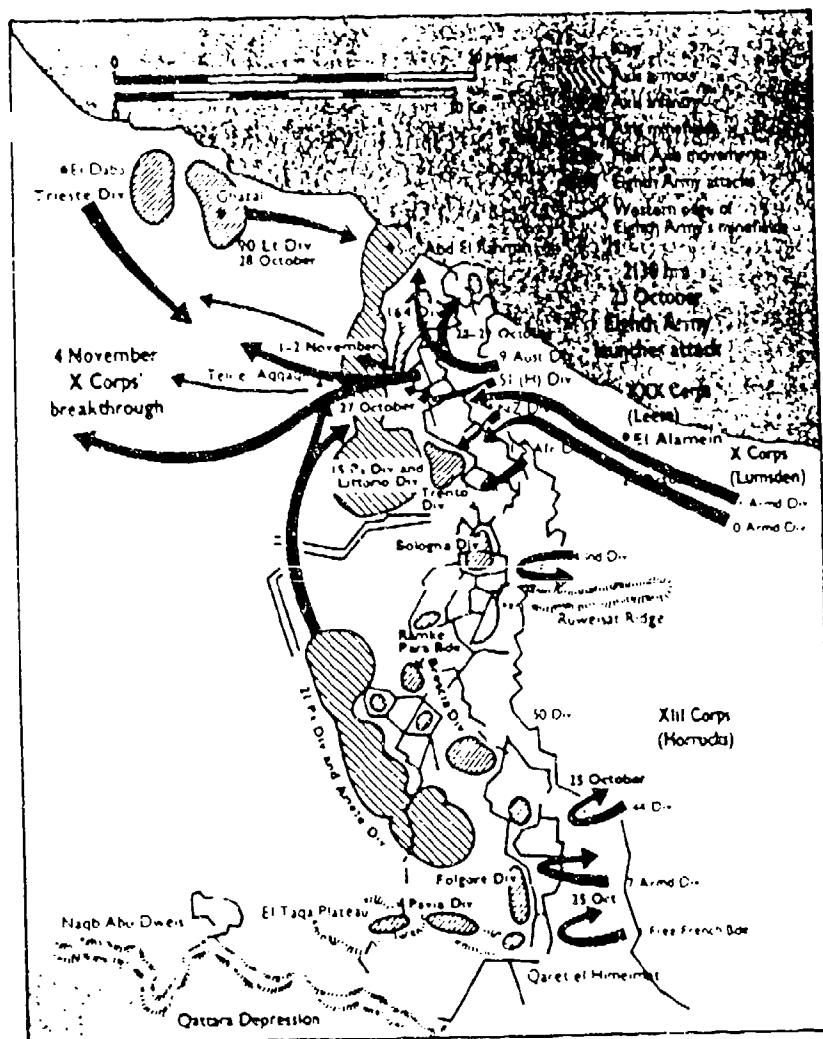
During September, Winston Churchill learned of the new plan for resuming the offensive in the Western Desert. Montgomery had scheduled the attack for October 1942.⁵⁰³ Churchill wanted action and saw no reason for delay after the success of Alam Halfa.^{504 505} On 17 September, Churchill cabled Alexander suggesting that the offensive be moved up.⁵⁰⁶ He prodded Alexander as he had prodded Wavell for Battleaxe and Auchinleck for Crusader. Alexander took the cable to Montgomery

who drafted a reply stating that 8th Army would be insufficiently trained and the new equipment (Sherman tanks) would be wasted if the offensive took place in September, but that success would be "assured" if the offensive was delayed until October.⁵⁰⁷

Alexander sent out the reply that Montgomery had drafted.

Churchill protested vigorously, but finally gave in to the arguments of Alanbrooke and Alexander, which Montgomery had provided.⁵⁰⁸

Montgomery's plan of attack divided the battlefield along the El Alamein Line into a northern corps zone and a southern corps zone. The main attack would be initiated in the northern zone and breach two corridors through which Montgomery would pass his armored reserve corps to affect a limited two mile penetration.^{509 510} Then 8th Army would destroy the Axis infantry divisions in a battle of attrition that Montgomery called the "dogfight".⁵¹¹ Once the Axis infantry was destroyed, the 8th Army would breakout to pursue and destroy the Axis armor.⁵¹² In the north, the British XXX Corps would lead the attack across a 10 mile front.⁵¹³ The XXX Corps consisted of the 9th Australian Division, 51st Highland Division, 2nd New Zealand Division, and the 1st South African Division.^{514 515} The 4th Indian Division was tasked to create a diversion.⁵¹⁶ Once XXX Corps breached the Axis defenses, Montgomery planned to pass the X Corps, his armored reserve, through these corridors to fix the enemy armor.^{517 518} The British X Corps consisted of the 1st and 2nd Armored Divisions.⁵¹⁹ In the south, the XIII Corps would launch a supporting attack to provide



520.

THE SECOND BATTLE OF EL ALAMEIN 23 October - 4 November 1942

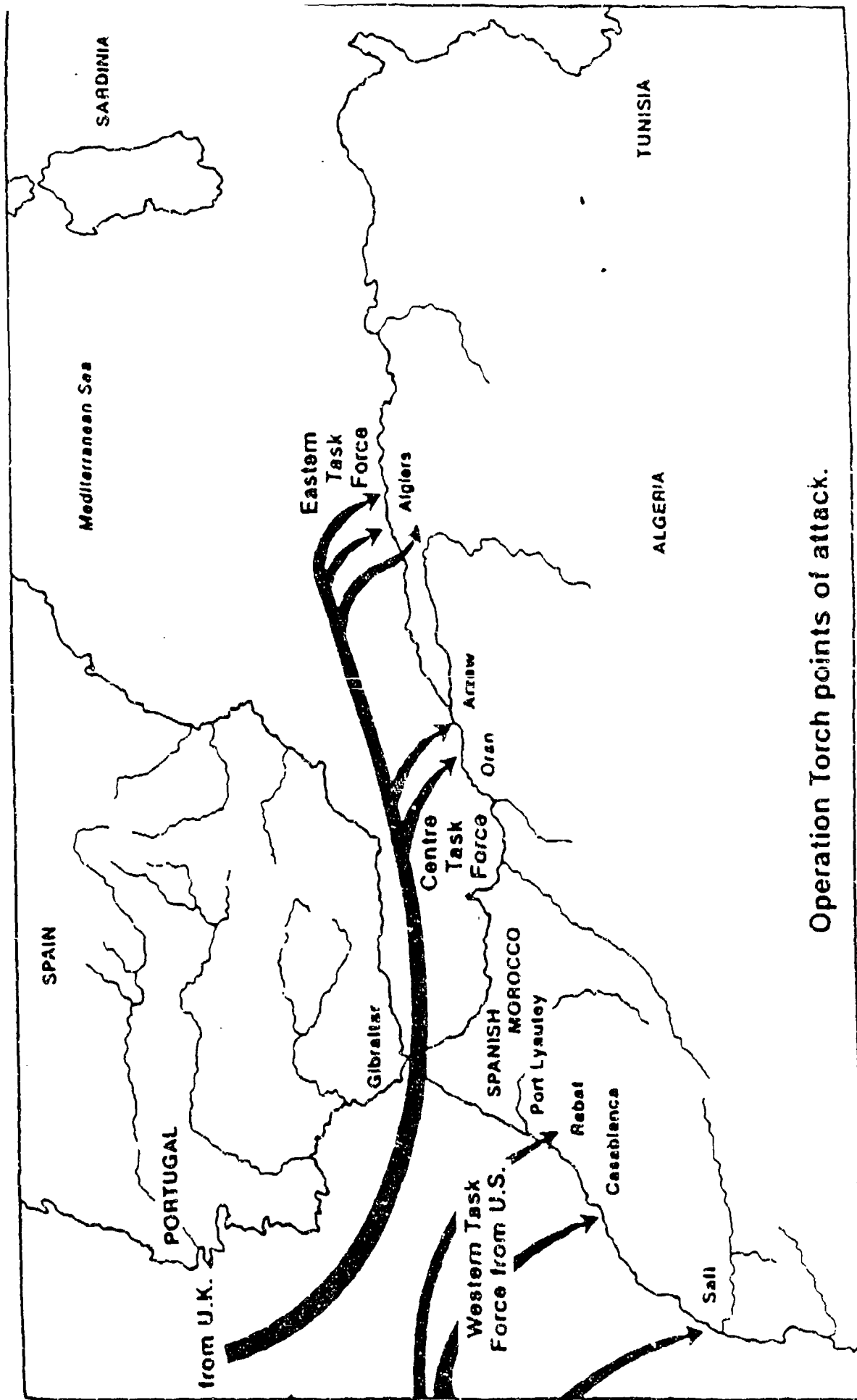
a diversion and fix the Axis armored reserve, the 21st Panzer and Ariete Divisions.⁵²¹ XIII Corps consisted of the 44th and 50th Infantry Divisions, 7th Armored Division and the 1st Free French Brigade.⁵²² The 7th Armored Division would open a corridor through the old British mine field, but was not to become decisively engaged.⁵²³ Heavy artillery and air attacks would support the plan. The air operations consisted of four phases. First, enemy supply lines would be attacked. Second, counterair strikes would take place against enemy airfields. Third, enemy air reconnaissance would be suppressed just before the attack. Fourth, tactical air support would be provided to ground forces.⁵²⁴ Montgomery's plan was innovative in that it called for penetrating the Axis defenses, whereas all previous plans had tried to out flank the enemy to the south.⁵²⁵ This deceived the Germans who expected the main attack in the south.⁵²⁶ Secondly, his plan differed from past plans in that it envisioned the total destruction of the enemy forces on the battlefield rather than a drive back across Egypt and the Cyrenaica.⁵²⁷ On the Axis side, Rommel had planned for the defense before he left for Germany.⁵²⁸ He intended to hold a strong defensive line and counterattack against any penetrations.⁵²⁹ He realized that his relative strength, lack of fuel and British air superiority would preclude a mobile defense.⁵³⁰ Thus, the Axis line consisted of Italian infantry battalions with a neighboring German battalion to add firepower along the line.⁵³¹ Mine fields were laid beginning 1000 to 2000 yards in front of the main defensive belt.⁵³²

The main defensive line was 2000 to 3000 yards in depth with the Panzer Divisions positioned behind the line so that they could fire to the front of the main defensive positions to increase the firepower of the line.⁵³³ Panzer units were to disengage and move north or south of the line to cover any penetrations.⁵³⁴ Additionally, the Axis soldiers built strong defensive positions so that they could withstand the expected air and ground attacks.⁵³⁵

The Second Battle of El Alamein opened at 2140 hours on 23 October 1942 when 900 artillery guns conducted a 20 minute preparation followed by infantry attacks in both the XXX Corps and XIII Corps zones.^{536 537} Four hours later, the X Corps advanced through the two corridors in the XXX Corps zone to seize their limited objectives.^{538 539} The Italian Littorio Infantry Division put up a stiff fight and the 15th Panzer Division counterattacked to contain the penetrations.^{540 541} General Stumme died of a heart attack while traveling forward to the front lines,⁵⁴² and Hitler asked Rommel to return to North Africa on 25 October.^{543 544} In the south, XIII Corps held the 21st Panzer Division in place.⁵⁴⁵ Over the next week, both side fought the "dogfight".⁵⁴⁶ When the 50th Division suffered heavy casualties on 24 October, Montgomery suspended the XIII Corps' advance.⁵⁴⁷ But in the north, violent tank battles continued.⁵⁴⁸ Then on 25 October, Montgomery shifted his main effort in XXX Corps to the 9th Australian Division's sector, where he intended to cut Rommel's supply line along the

coastal road and railway.⁵⁴⁹ Rommel moved the 21st Panzer Division north, and Montgomery responded by moving the 7th Armor Division north.⁵⁵⁰ By 29 October, the Australians had reached the coast, and the 164th German Division narrowly escape encirclement with the help of a counterattack by the 21st Panzer Division.⁵⁵¹ Montgomery then decided to attempt a breakout south of the coastal road in the "Kidney Hill" area.^{552 553} The 2nd New Zealand Division lead the attack behind a "rolling barrage" of artillery fire and cleared lanes for the advance of the British tanks.^{554 555} A violent tank battle raged all day, and Rommel successfully sealed off the 4000 yard penetration with counterattacks by the 21st Panzer Division and Italian armor.^{556 557} However, the Panzer Army had suffered terrible attrition. British artillery and air strikes destroyed many of the 88mm guns.⁵⁵⁸ By the end of the day, the Afrikakorps had only 35 tanks left, and Rommel had been forced to shorten the front by bringing the Ariete Division north and redeploying artillery.⁵⁵⁹ Rommel's supply situation also became critical. On 2 November, his Army fired 450 tons of ammunition, but only 150 tons arrived from Tobruk, which was under heavy sea and air attack.⁵⁶⁰ Just as significantly, the battle had reduced Axis troop strength to one third of what it was at the beginning of the fight.⁵⁶¹ Then on the evening of 2 November, Rommel ordered a withdrawal.⁵⁶² But at noon on 3 November, he received a message from Hitler ordering the Panzer Army to stand fast and fight to "victory or death".⁵⁶³ Rommel reluctantly obeyed and his Army paid a high price. For 48 hours they continued to hold out, but

suffered terrible losses.⁵⁶⁴ For on the night of 3-4 November, Montgomery launched another attack. The 51st Division and the 4th Indian Division achieved a complete breach, and the 1st and 10th Armor Divisions broke out.⁵⁶⁵ By the evening of 4 November, the entire Italian 20th Corps to include the Ariete Division had been completely destroyed, and Rommel finally ordered a retreat.⁵⁶⁶ On the morning of 5 November, Berlin and Rome sent messages authorizing a withdrawal to Fulka.⁵⁶⁷ The Battle of El Alamein was over and Montgomery began pursuing Rommel across North Africa on 5 November.⁵⁶⁸ This pursuit would drive the remnants of Rommel's shattered Army all the way into Tunisia where the German Army would make its final stand in North Africa. As Montgomery chased Rommel west across Egypt, the Allied Expeditionary Force executed Operation Torch and began landing in Northwest Africa.⁵⁶⁹



Operation Torch points of attack.

The Battle of El Alamein marked the beginning of the end for the Axis forces in North Africa and eventually Europe. It was a historical turning point in World War II and gave the British people their first major victory. During the battle, Britain lost 13,000 soldiers and 432 tanks.⁵⁷¹ Rommel lost 58,000 soldiers (34,000 German), 500 tanks and 400 guns.⁵⁷² Rommel lost the battle for several reasons. He lacked relative personnel and material strength and suffered severe attrition of the resources he did have. He also lacked adequate logistical support to sustain his operations, and he continued to wage an offensive campaign after exceeding a culminating point. Montgomery won the battle because he achieved greater personnel and material strength, he fought divisions as divisions, he trained and rehearsed his Army, he applied overwhelming artillery and airpower to attrite the Axis forces and he exerted outstanding leadership. If the Battle of Britain was England's finest hour, El Alamein was Montgomery's finest hour. He performed brilliantly, and in four months he led the British 8th Army from the depths of despair to achieve the greatest British victory of World War II.

CONCLUSIONS

The early North African campaigns leave behind a legacy of lessons learned in strategic thinking as well as theater and operational warfighting. Foremost, these campaigns show that Britain successfully followed a strategy of indirectly engaging Germany. This strategy caused the Axis powers to waste resources on economy of force efforts in North Africa, while Germany pursued the conquest of Russia. Britain persisted in this long and bloody war for 29 months before a single American ground combat soldier ever landed in North Africa. British strategy proved successful when Operation Torch quickly ended the North African war, regaining control of the Mediterranean Sea and providing a springboard for further operations into Sicily and Italy. Victory in North Africa also shortened supply lines to Egypt and the Far East, thus freeing up transport and increasing delivery of supplies. The British made the best of the bad situation into which they fell in June of 1940. Initially, they responded to war by fighting the enemy where they found them. But by December 1941, they favored the indirect strategy of bringing the war to Europe through North Africa and the Mediterranean.⁵⁷³ With the United States entry into the war, the British began to pressure the Americans during the first half of 1942 to support their strategy and join them in conducting Operation Torch. Ultimately, the British stand in North Africa led the way to a final victory in Western Europe.

These early campaigns also demonstrate the political aspects and risks associated with theater warfare. Mussolini ordered

Graziani's Army to attack despite its lack of an objective, modern weapons, transport and both Balbo's and Graziani's requests for delays. Further, success in North Africa was vital to the survival of Winston Churchill's government. Churchill wanted victory, but he also needed victory. Churchill relieved some of Britain's most prominent and experienced generals in North Africa. But the British generals also found it necessary to take firm positions with the political leadership. Wavell refused to squander fighting strength in British Somaliland and advised against operations in Syria. Auchinleck refused to return to England for consultations. Alexander and Montgomery resisted Churchill's demands to attack at El Alamein in September rather than October 1942. Churchill placed Alexander and Montgomery in command at El Alamein because he had to act to achieve victory, to protect his political support at home and to retain American political and military support for his North African strategy and for Operation Torch. Similarly, Churchill ended Wavell's pursuit of the Italians at Tripoli in 1941 by ordering him to send additional forces to Greece and he pressured Wavell into executing Operation Battleaxe too soon.

Furthermore, The British experience in North Africa provides some excellent examples of joint and combined warfare. In 1939, the British leadership correctly estimated the emerging regional threat to their national interests, and they established the new Middle-East Command. This command existed throughout the North African War and effectively achieved unity of effort. It brought

together the land, air and sea commanders operating in the theater and provided them with a joint planning staff. Although there were times when coordination broke down as Montgomery would discover upon assuming command, the Middle-East Command was a successful joint command. It was also a successful combined command, for it integrated forces from Britain, India, South Africa, Australia, New Zealand, Poland and Free France. This coalition provided an important source of strength when Britain otherwise stood alone against the axis in 1940 and 1941. Further, the Middle-East Command did an effective job of writing war plans and preparing for war in the limited time between its organization in July 1939 and Italy's declaration of war in June 1940. Without this preparation, Britain probably would not have been so successful against the Italians or as effective with their campaigns in East Africa, Syria, and Iraq. These campaigns also show how effectively operations in the lesser theaters of operation supported operations in the North African desert, the main theater. Another lesson reflected by the British North African experience is the value of the forward infrastructure and basing that Britain had established in Egypt, East Africa and Palestine. Although small in many cases, the British presence could be rapidly expanded when war came and served as communications and transportation nodes that greatly aided the war effort. Likewise, General Wavell's ability and that of his successors to command, control and move forces so effectively throughout such a vast theater of war is greatly impressive, even 50 years after the fact.

The Middle-East Command boldly demonstrated the value of modern day concepts of "irregular" or special operations forces when integrated into the theater strategy and campaign plans. Colonel Sandford and Odie Wingate facilitated Haile Selassie's revolution and return to power in Ethiopia, achieving economy of force in a secondary theater of operations. The British Long Range Desert Group and Special Air Service struck deep behind enemy lines to interdict communications, logistics and key operational targets. The exploits and accomplishments of Colonel Sandford, Major Wingate, Major Bagnold and Major Sterling validated the concept that unconventional operations by small groups of specially equipped and trained soldiers could achieve major successes at the operational level of war.

Furthermore, the early North African campaigns reflect the tremendous importance of properly estimating, planning, and supporting modern motorized forces logistically. The desert campaigns consumed enormous quantities of fuel, ammunition, water and other material. They also required continual maintenance support. The British had a well established logistical base in Egypt, even if it required a 13,000 mile trip around Cape Horn to sustain it. Moreover, the British system of rail, truck and Mediterranean intra-theater sea lift pushed their support forward. Conversely, Rommel and the Italians suffered under a less consistent supply system. Despite enjoying the advantage of interior lines, supplies backed up in Tripoli for lack of fuel, trucks or organization to bring them east. Rommel was defeated as

much by his lack of logistical support as he was by the British 8th Army. Moreover, Hitler's strategy for the North African theater did not agree with Rommel's operational conduct of the war. Therefore, a major discrepancy existed between the resources provided to the theater and those required. This thesis is advanced by Major Kirkland in his study of Rommel's desert campaigns in which he argues that Rommel consistently ignored the strategic intent of the German High Command to limit the war in North Africa.⁵⁷⁴ Thus many of Rommel's logistical problems resulted because he conducted operations far exceeding those originally envisioned for the theater. Late in WW II, General Wavell would publish his "Four Lessons of War." The first lesson he wrote down dealt with the need for adequately estimating and planning for logistical support.

The more I have seen of war the more I realise how it all depends on administration and transportation (what our American allies call logistics). It takes little skill or imagination to see where you would like your army to be and when; it takes much knowledge and hard work to know where you can place your forces and whether you can maintain them there. A real knowledge of supply and movement factors must be the basis of every leader's plan; only then can he know how and when to take risks with those factors; and battles and wars are won only by taking risks.⁵⁷⁵

Rommel apparently reached the same conclusion. Writing after his Army's defeat at El Alamein, he stated:

The first essential condition for an army to be able to stand the strain of battle is an adequate stock of weapons, petrol and

ammunition. In fact, the battle is fought and decided by the Quartermaster before the shooting begins. The bravest man can do nothing without guns, the guns nothing without plenty of ammunition, and neither guns nor ammunition are of much use in mobile warfare unless there are vehicles with sufficient petrol to haul them around. Maintenance must also approximate, both in quantity and quality, to that available to the enemy.⁵⁷⁶

The early North African campaigns yielded several important lessons at the operational and tactical level. The British victory of Wavell, Wilson and O'Connor serves as a classic example of maneuver warfare and is worthy of detailed study, even 50 years after the fact. The failure of the British commanders and intelligence staffs to correctly estimate German capabilities and intentions before both Rommel's First and Second Offensives, cost the British dearly. These past events should serve as examples of how quickly heavy forces can be deployed and massed, and how easy it is to deceive even in the desert. These campaigns also provide several excellent illustrations of culminating points. Additionally, Rommel demonstrated the effectiveness of retaining an armored reserve for use in delivering a decisive counterattack, and he showed how effective antitank weapons can influence both the defense and the offense. Under Montgomery, the British finally adopted the doctrine of keeping an armored reserve. Additionally, Rommel demonstrated how a commander can quickly influence a battle if he can understand events as they are happening. Rommel accomplished this by placing himself well forward on the battlefield and he consistently reacted inside the British decision cycle throughout the early North African campaigns. Rommel also

showed that the "battle of attrition" is often necessary in modern maneuver warfare. In North Africa, decisive victory without attrition occurred only once against the technologically and qualitatively inferior Italian Army. Rommel sought to split the enemy forces so that they could be destroyed piece-meal as he applied operational maneuver. In the end, Rommel exceeded a culminating point, lacked fuel and ammunition and became so badly attrited that he could no longer practice mobile warfare. Commanders usually seek to achieve decisive victory through operational maneuver that avoids attrition warfare, but the North African campaigns show that attrition is usually applied with maneuver to defeat mechanized forces in open terrain. The North African campaigns also demonstrated the importance of tactical air power in supporting land operations and how vital it is to effectively integrate the command and control of the land and air forces. Finally, experience gained in the early North Africa campaigns showed that the British tanks and early American Sherman tanks lacked sufficient armor protection and that their guns could not defeat the newest German Mark IV tanks. This led to improvements in later model tanks and ammunition and demonstrates the tremendous price that the British paid for lagging technologically behind Germany in the development of modern tanks and guns.

The legacy of the early North African War is a history of mobile warfare campaigns, battles and engagements. The British campaign against the Italians in 1940, Sidi Rezegh, Totensonntag,

Gazala and El Alamein certainly equal in intensity, violence, and scale any of history's other great armor battles. Moreover, the desert environment gave these battles a fundamental pureness that reveals a dimension of mobile land warfare that approaches that of naval battles. In North Africa, the British learned how to control and fight large combined arms formations and tactical air forces. As Britain and her allies learned these lessons, Erwin Rommel demonstrated to the world that the Afrikakorps had already mastered these concepts. Although the last fifty years have brought technological improvements, many of the underlying principles and lessons of modern mechanized and armored warfare can be learned by studying the campaigns of this period.

APPENDIX A

LISTING OF IMPORTANT HISTORICAL PERSONS

ALANBROOKE, (Alan Francis Brooke): British Field Marshall and Chairman of the Imperial General Staff (IGS) during most of WW II. Spelling of his name appears as either Alanbrooke or Alan Brooke. (Lived: 1883-1963).

ALEXANDER, (Harold Alexander): British Field Marshall during WW II. He replaced Auchinleck as Commander-in-Chief (C-in-C), Middle-East Theater in July 1942. (Lived: 1891-1969).

AUCHINLECK, (Claude Auchinleck): British Field Marshall with extensive experience in India. Also served briefly as C-in-C in northern Norway during 1940. He was C-in-C in India when Churchill choose him to replace Wavell as C-in-C Middle-East Command after the failure of Operation Battleaxe. Auchinleck conceived and then executed Operation Crusader in November 1941. Churchill relieved him in July 1942 after the fall of Tobruk and replaced him with Field Marshall Alexander. Auchinleck was a soldier of tremendous stature who was affectionately known to his officers and soldiers as "The Auk". (Lived: 1884-1981).

BAGNOLD, (R. A. Bagnold): British Army major who first proposed and organized General Wavell's British Long Range Desert Group in 1940.

BALBO, (Maresciallo Italo Balbo): Italian general who served as Commandante Superiore (C-in-C) of all Italian forces in Libya in 1940. He was killed on 28 June 1940 when Italian anti-aircraft gunners shot down his airplane over Tobruk. Marshall Graziani was appointed as his successor.

BASTICO, (Ettore Bastico): Italian General who succeeded Marshall Gariboldi in the fall of 1941 as Commandante Superiore C-in-C) of all Axis forces in Libya.

BAYERLEIN, (Fritz Bayerlein): German lieutenant colonel and later Lieutenant General who served as Chief of Staff for the Afrikakorps and later Rommel's Panzer Army during 1941 and 1942. Bayerlein was one of Rommel's favorite and most trusted officers. He joined the German Army at the age of 16 and fought in WW I. Before joining the Afrikakorps, he served on the Eastern Front as Operations Officer for General Guderian's Panzer Corps. Bayerlein was medical'' evacuated from Africa in the Spring of 1943. He later commanded Panzer Division and Corps in Europe. He was captured by the All rmy in April 1945. (Lived: 1899-1970).

BEREFORD-PEIRE, (Noel Bereford-Peire): British Lieutenant General who commanded the 4th Indian Division during Wavell's first North African campaign of 1940. Wavell appointed him Commander, Western Desert Force on 8 April 1941 after the Germans captured LTG Neame.

BERTI, (Mario Berti): Italian General who commanded the Italian 10th Army in the Cyrenaica until 23 Dec 1940. He led the initial Italian advance into Egypt in September 1940.

BROOKE, (Alan Francis Brooke): See Alanbrooke.

CORBETT, (T.S. Corbett): British Lieutenant General who was an experienced Indian cavalry officer. In early 1942, Auchinleck appointed him as Chief of Staff for Middle-East Command. Churchill directed Corbett's removal at the same time he decided to remove Auchinleck in July 1942.

CRUWELL, (Ludwig Cruwell): German Lieutenant General who had served in WW I and was promoted to Major General in 1939. In France during 1940, he commanded the 2nd Motorized Division and then commanded a Panzer Division during the Balkan Campaign of 1941. He went to North Africa in September 1941. There he succeeded Rommel as commander of the Afrikakorps when Rommel became Commander of the Panzer Army Group. He was captured on 29 May 1942 after his Storch liaison airplane landed behind British lines during the Battle of Gazala near Tobruk. (Lived: 1892-1958).

CUNNINGHAM, (Alan G. Cunningham): British Lieutenant General and later General. Commanded Kings African Rifles and South African Division that invaded Italian Somaliland on 2 February 1941 and then continued into Ethiopia to support General Platt's invasion from southern Sudan. Following these campaigns, he was transferred to Egypt and appointed Commander, 8th Army in August 1941. He was relieved by Auchinleck in November 1941. Brother of Sir Andrew Cunningham, C-in-C British Mediterranean Fleet.

CUNNINGHAM, (Andrew Cunningham): C-in-C British Mediterranean Fleet based at Alexandria. Brother of Army Lieutenant General Alan Cunningham.

DILL, (John Dill): British Field Marshall who served as Chief Imperial General Staff (CIGS) early in WW II. He was appointed British representative to the American Chiefs of Staff in February 1942. He was succeeded as CIGS by Alanbrooke.

EDEN, (Robert Antony Eden): British Foreign Secretary both before and during WW II (1935-1938 and 1940-1945). (Lived: 1897-1977).

GAMBARA: Italian General who commanded the 20st Armor Corps as part of Rommel's Panzer Group Africa. Rommel insisted upon his replacement during the retreat from El Alamein and Gambara was relieved on 9 December 1942.

GARIBOLDI, (Italo Gariboldi): Italian General who replaced General Graziani as Commandante Superiore (C-in-C) of Italian forces in Libya after Graziani resigned his post in February 1941.

GODWIN-AUSTIN, (A.R. Godwin-Austin): British Major General and later Lieutenant General who served in East Africa during the early 1941 campaigns to liberate the Ethiopia and the Somalilands. He commanded the 12th African Division which led the main attack into Italian Somaliland. After arriving in the Western Desert, he commanded the British XIII Corps until he asked to be relieved in late January 1942 following an incident in which General Ritchie countermanded his orders and caused the encirclement of the 7th Armored Brigade at Benghazi.

GOTT, (W.H.E. "Strafer" Gott): British Brigadier General and later Lieutenant General who served continuously in the Western Desert from 1940 until 1942. He commanded the 7th Support Group during Wavell's 1940 offensive against the Italians. He took command of the British XIII Corps in late January 1942 after Godwin-Austin asked to be relieved. Churchill selected him to replace Auchinleck as Commander of 8th Army, but he was killed when the plane in which he was riding was shot down by German ME-109 fighters. Because of Gott's death, Churchill appointed Montgomery as Commander of 8th Army.

GRAZIANI, (Rodolfo Graziani): Italian General who fought in WW I and had extensive colonial experience in Africa. Appointed Governor of Italian Somaliland in 1935, Viceroy of Ethiopia (1936) and Honorary Governor of Italian East Africa in 1938. He commanded the Italian forces that invaded Egypt in September 1940. Resigned his post 8 February 1941 following an overwhelming British victory. Sentenced to 19 years in prison in 1950, but released the same year. (Lived 1882-1955).

HORROCKS, (Brian Horrocks): British Lieutenant General and later Field Marshall who commanded the British XIII Corps at the Battles of Alam Halfa and El Alamein. Later in WW II, he commanded the British XXX Corps during the Battle of Normandy, Operation Market Garden and drive into Germany.

LONGMORE, (Arthur Longmore): British Air Marshall who serve as Air Officer Commander-in-Chief of British Middle-East Forces until April 1941.

LEESE, (Oliver Leese): British Lieutenant General who commanded XXX Corps at the Battle of El Alamein. Later, his corps led the Allied invasion of Sicily. He succeeded Montgomery as Commander, 8th Army and in November 1944 became Commander of Allied Land Forces in Southeast Asia.

LUMSDEN, (H. Lumsden): British Lieutenant General who commanded the British X Corps at the Battle of El Alamein. Earlier in North African War, he commanded the British 1st Armored Division. Montgomery eventually had him reassigned to England.

MONTGOMERY, (Bernard Montgomery): British General who commanded the British 8th Army at the Second Battle of El Alamein and during the final months of the North African War in 1942 and 1943. Montgomery joined the British Army in 1908 and served in India and then France during WW I. Between the wars, Montgomery dedicated himself to his profession, taught at the Army Staff College at Camberly and wrote an infantry manual on command and control at the division through army level. He became commander of the 3rd British Division in 1939 and led the division as part of the British Expeditionary Force in 1940 to include the Dunkirk evacuation. During the next two years, he concentrated on training new British forces while serving as Commander of XII Corps and then South-Eastern Army. Churchill selected Montgomery to be Commander, 8th Army on 8 August 1942. After the Axis were defeated in North Africa, Montgomery continued to command the 8th Army during the invasions of Sicily and Italy. In December 1943, Montgomery was appointed Commander, 21st Army Group and commanded all Allied ground forces during the Normandy Invasion until General Eisenhower could move his headquarters to France in September 1944. At that time, Montgomery was promoted to Field Marshall and continued to led the 21st Army Group until the end of the war in Europe. After WW II, he commanded the British occupation forces, became CIGS in June 1946 and then served as Deputy Supreme Allied Commander in Europe (NATO) from 1951 to 1958. (Lived: 1887-1976).

NAVARRINI: Italian General who commanded the Italian 21st Corps as part of Rommel's Panzer Group Africa.

NEAME, (Phillip Neame): British Lieutenant General who commanded the British Western Desert Force and became Military Governor of the Cyrenaica in February 1941. He arrived in the Western Desert Force from Palestine, was an experienced engineer officer, and recipient of the Victoria Cross. However, he lacked any desert experience and proved to be an inept commander. He was captured on 6 April 1941 along with LTG O'Connor as Rommel forced a British retreat from the Cyrenaica.

O'CONNOR, (Richard O'Connor): British General who commanded the British Western Desert Force at the beginning of the North African War. He led the campaign that defeated the Italians between December 1940 and February 1941. He had previously served in India and Palestine. He was captured near Tobruk in early April 1941 during Rommel's First Offensive. He remained in an Italian POW camp until liberated in 1943. In 1944, he led the British VIII Corps during the Normandy Invasion. (Born 1889).

PLATT, (William Platt): British General who commanded the Sudan Defense Force of approximately 5000 soldiers consisting of the Western Corps, Eastern Arab Corps, Equatorial Corps and Camel Corps. After being reenforced with the 4th and 5th Indian Divisions, he led the invasion to liberate Ethiopia on 19 January 1940.

RITCHIE, (Neil Ritchie): British Major General and later General who arrived in North Africa in 1941 to serve as Deputy Chief of Staff to the C-in-C Middle-East Command, General Auchinleck. He played a major role in planning Operation Crusader, and Auchinleck appointed him Commander, 8th Army on 26 November 1941. Prior to this appointment, his last command was at battalion level during WW I. He was in command of 8th Army when Tobruk fell in June 1942. Auchinleck relieved him and at Churchill's urging, and Auchinleck personally assumed command of 8th Army on 25 June 1942. Later in WW II, Ritchie commanded the 2nd British Army in Northwest Europe after the D-day invasion.

ROMMEL, (Erwin Rommel): Germany's most popular hero of WW II. He served in WW I as a lieutenant and captain and received Germany's highest decoration for valor. He held routine positions between the world wars and in the 1930s taught at the Dresden and Wiener-Neustadt infantry schools. He also wrote a text on infantry tactics. Rommel became known to Hitler who placed him in command of his personal headquarters at the beginning of WW II. Rommel then served as the commander of the 7th Panzer Division during the invasion of France and made a name for himself by quickly driving to the French coast and capturing the port of Cherbourg. In February 1940, Hitler appointed LTG Rommel to command the Afrikakorps and assist the Italians in North Africa. Rommel arrived in North Africa on 12 February 1941. During his Second Offensive, he captured Tobruk and Hitler promoted him to Field Marshall (General) in June 1942. Rommel was medically evacuated from North Africa on 22 September 1942, but returned at Hitler's request during the Second Battle of El Alamein. However, Rommel's presence could not prevent a more powerful and better supplied British Army from driving the remnants of his Afrikakorps across Libya and into Tunisia. Hitler ordered Rommel to return to Europe before the Axis surrender in Tunisia, and Rommel eventually became Commander, Army Group B in France. He was wounded after the Normandy Invasion when his car was strafed by a low flying aircraft. Rommel grew disillusioned with Hitler and became

implicated in a plot to assassinate him in July 1944. Because of his popularity, Hitler gave Rommel the choice of committing suicide or being court-martialed. If he chose suicide, his family would keep their home and benefits. Rommel swallowed poison on 14 October 1944. (Lived: 1891-1944).

SANFORD, (Dan Sanford): Retired British Army Colonel who had settled in Ethiopia and was evicted during the Italian occupation. He led "101 Mission", a small secret force that entered Ethiopia in August 1940 to coordinate an Ethiopian revolt against the Italians. Later, he was promoted to Brigadier General.

SELASSIE, (Haile Selassie): Known before his coronation as Ras Tafari. He was a direct descendent of the Ethiopian Royal Family. Proclaimed Emperor 3 April 1930 upon the death of the Empress Zauditu. Crowned Emperor 2 November 1930. Mobilized the Ethiopian Empire 2 October 1935. Led the Ethiopian armed forces in resisting the Italian invasion of 1935. Fled to exile in England in 1936. Returned with Orde Wingate to Ethiopia on 20 January 1941 to personally lead rebellion forces. Entered Addis Ababa on 5 May 1941 and resumed the Throne. Ruled as Emperor until deposed by a Provisional Military Government on 12 September 1974. Died in Captivity. (Lived: 1892-1975).

SMUTS, (Jan Christian Smuts): South African Field Marshall. He became South African Prime Minister and Defense Minister in 1939 at the age of 69. He had led guerrilla soldiers during the Boer War and fought against the Germans during the East African Campaigns of WW I. (Lived: 1870-1950).

STIRLING: (David Stirling): British Lieutenant and later Major who in 1941 first proposed, organized and then led the Special Air Service (S.A.S.) units in North Africa attacking airfields, supply lines and ports in Libya. He was captured in Tunisia in January 1943 and spent the remainder of WW II in Italian and German prison camps. After the war, he settled in Rhodesia where he pursued both business and politics.

STUMME, (George Stumme): German General who was appointed to replace Rommel as Commander, Panzer Group Africa in September 1942 after Rommel was medically evacuated to Europe. He was a veteran corps commander who had served on the Eastern Front in Russia. He suffered a heart attack and died on 23 October 1942 during the initial hours of the Second Battle of El Alamein. Hitler then asked Rommel to return to Africa immediately.

TEDDER, (Arthur Tedder): Deputy Air Officer C-in-C Middle East Command in 1940. Became Air Officer C-in-C Middle-East Command on 1 May 1941. He was the principal architect of British WW II doctrine for tactical air support and air defense. (Lived: 1870-1950).

WAVELL, (Archibald P. Wavell): British General who served as C-in-C Middle-East Command and C-in-C India during WW II. He served in France during WW I, losing sight in his left eye at the Battle of Ypres. Later served as an attache to the Russian Army during WW I. He had extensive overseas experience in India, Europe, Russia, Palestine, Transjordan and Africa. (Lived: 1883-1950).

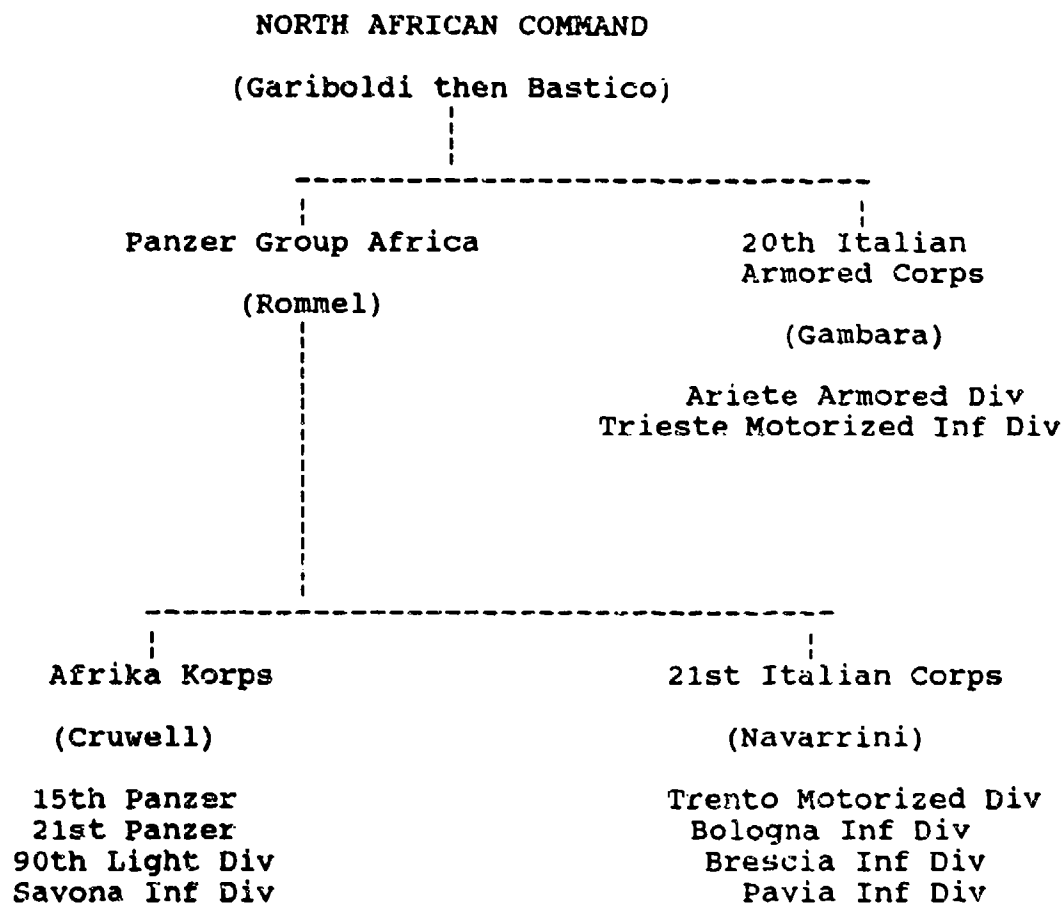
WINGATE, (Orde C. Wingate): British Army Major who was personally selected by Wavell and Eden to accompany Haile Selassie in his return to Ethiopia and help coordinate the Ethiopian revolt with British operations. Wingate had extensive experience in "Irregular" operations in Palestine where he had fought with such figures as Moshe Dayan. Later during WW II, he was killed in a plane crash in India while supporting the Chindits. (Lived: 1903-1944).

WILSON, (Maitland Wilson): British Army Lieutenant General who commanded all British Army units in Egypt in 1940 and held command through the defeat of the Italian Army in February 1941. In March 1941, he led the British Expeditionary Force to Greece. Later, he led the British and Free French force that advanced from Palestine to capture Damascus, Syria and then to Beirut, Lebanon in June and July 1941, respectively.

APPENDIX B

ITALIAN - GERMAN COMMAND AND CONTROL STRUCTURE⁵⁷⁷

FALL 1941 THROUGH NOVEMBER 1942



APPENDIX C

ROMMEL'S RULES OF DESERT WARFARE⁵⁷⁸

Tactically, the battle of attrition is fought with the highest possible degree of mobility. The following points require particular attention:

- (a) The main endeavor should be to concentrate one's own forces in space and time, while at the same time seeking to split the enemy forces spatially and destroy them at different times.
- (b) Supply lines are particularly sensitive, since all petrol and ammunition, indispensable requirements for battle, must pass along them. Hence, everything possible must be done to protect one's own supply lines and to upset, or better still, cut the enemy's. Operations in the enemy's supply area will lead to him breaking off operations elsewhere, since, as I have indicated, supplies are the fundamental premise of the battle and must be given priority of protection.
- (c) The armour is the core of the motorised army. Everything turns on it, and other formations are mere auxiliaries. The war of attrition against the enemy armour must be waged as far as possible by tank destruction units. One's own armour should only be used to deliver the final blow.
- (d) Reconnaissance reports must reach the commander in the shortest possible time; he must take his decisions immediately and put them into effect as fast as he can. Speed of reaction decides the battle. Commanders of motorised forces must therefore operate as near as possible to their troops, and must have the closest possible signal communications with them.
- (e) Speed of movement and the organisational cohesion of one's own forces are decisive factors and require particular attention. Any sign of dislocation must be dealt with as quickly as possible by reorganisation.
- (f) Concealment of intentions is of the utmost importance in order to provide surprise for one's own operations and thus make it possible to exploit the time taken by

the enemy command to react. Deception measures of all kinds should be encouraged, if only to make the enemy commander uncertain and cause him to hesitate and hold back.

- (g) Once the enemy has been thoroughly beaten up, success can be exploited by attempting to overrun and destroy major parts of his formations. Here again, speed is everything. The enemy must never be allowed time to reorganise. Lightning regrouping for the pursuit and reorganisation of supplies for the pursuing forces are essential

Concerning the technical and organisational aspects of desert warfare, particular regard must be paid to the following points:

- (a) The prime requirements in the tank are manoeuvrability, speed and a long-range gun - for the side with the bigger gun has the longer arm and can be the first to engage the enemy. Weight of armour cannot make up for the lack of gun-power, as it can only be provided at the expense of manoeuvrability and speed, both of which are indispensable tactical requirements.
- (b) The artillery must have greater range and must, above all be capable of greater mobility and of carrying with it ammunition in large quantities.
- (c) The infantry serves only to accompany and hold the positions designed to prevent the enemy from particular operations, or to force him into other ones. Once this object has been achieved, the infantry must be able to get away quickly for employment elsewhere. It must therefore be mobile and be equipped to enable it rapidly to take up defense positions in the open at tactically important points on the battlefield.

APPENDIX D

TABLE OF OPPOSING FORCES AT EL ALAMEIN^{579 580 581}

LATE MAY 1942

	<u>British</u>	<u>Axis</u>
Soldiers	195000	104000
Tanks (medium)	1030	537
Artillery	900	500
Combat Aircraft	530	350
Infantry Divisions	7	8
Armor Divisions	3	4

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